AirCruiser™ G Desktop Router
GN-BCO1

User's Guide

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Chapter 1 Introduction

Overview

The AirCruiser G Desktop Router, also known by its model name GN-BC01, has all the features a modern wireless router should. It's a single port 10/100Mbps Wi-Fi access point, firewall and ADSL router in a PCI board. Yes, that's correct – **a wireless router on an averaged sized PCI board**. Don't be fooled by its striking similarity to a typical wireless PCI adapter; two Ethernet ports plus an antenna connector are the key to distinguish it from an ordinary wireless adapter.

The antenna that comes included with the AirCruiser G Desktop Router is unlike any other - there is a blue LED atop the tip which will flash at intervals – fast flashing indicates faster transmissions. It has a beefed up 3dBi gain compared with the 2dBi antennas that are bundled with most standard routers on the market and that translates into better wireless performance!

The AirCruiser G Desktop Router's PCI form factor is a breakthrough in wireless networking technology. Now, end-user's can realize significant space-saving benefits on their desks, shelves or wherever they'd traditionally deploy a wireless router. Once installed and connected, the AirCruiser G Desktop Router allows users to share network resources over the 10/100Mbps LAN port as well as enjoy wireless speeds of up to 54Mbps. For added versatility, it is also compatible with the 802.11b wireless standard. GIGABYTE raises the bar on easy-to-use and setup wireless home networking user experience with the AirCruiser G Desktop Router.

Features

- Interoperability with 54Mbps (802.11g) and 11Mbps (802.11b) devices
- Single 10/100Mbps Ethernet LAN port
- Built-in SmartSetup 3
- Wake On LAN function
- Hardware reset button
- 64 / 128-bit WEP
- Wi-Fi® Protected Access (WPA)
- Dynamic DNS
- UPnP™ (Universal Plug and Play)
- Network Address Translation (NAT)
- VPN pass-through
- 802.1x RADIUS Authentication

Package Contents

Please check that the AirCruiser G Desktop Router package contents include:

- AirCruiser G Desktop Router
- LED equipped 3dBi high gain magnetic mountable antenna
- Cat. 5 Ethernet patch cable
- AirCruiser G Quick Installation Guide

If there are any missing or damaged parts, please contact your local distributor or dealer immediately. If a replacement unit is needed, return the device with the original packing material, otherwise the warranty will be voided.

AirCruiser G Desktop Router Rear Panel

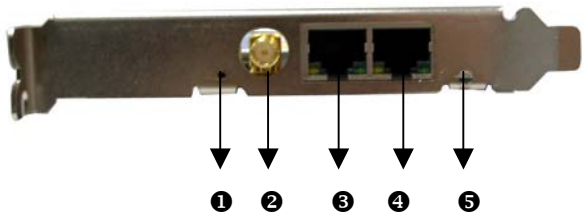


Figure 1-1 – AirCruiser Connectors

❶ **Reset**
Press and hold for 5 seconds to reset to factory default.

❷ **External Antenna Connection**
The dipole-type 2.4GHz antenna is removable

❸ **Internet Connection (WAN port)**
Connect your broadband RJ45 cable from your DSL modem.

❹ **Local Area Network Connection (LAN port)**
Connect the Router to other PCs on your wired network or other Ethernet network devices.

❺ **Power LED**
Solid green LED indicates OK.

Chapter 2 Installation

This chapter covers the installation of the AirCruiser G Desktop Router. The AirCruiser G Desktop Router uses standby power from your PC to stay 'always on', and receives power from the PCI bus – even with your computer off – when working normally; you should see the power LED become steady green. Please take note of this as you reach Step 3.

AirCruiser G Desktop Router - Factory Default Settings	
SSID (Network Name)	GIGABYTE
Broadcasting SSID	YES
Wireless Security	Open System (OFF)
IP Address of Web Configuration Utility	192.168.1.254
Configuration Utility Username/Password	admin/admin

Installing the Router

Step 1: Power off your PC.

Step 2: Plug the AirCruiser G Desktop Router into an open PCI slot on the motherboard and press gently until the card edge connecter is fully inserted into the PCI slot.

Step 3: **If working normally, the green power LED will be illuminated (see figure 2-1 below) and installation is complete! If the green power LED is not lit, please continue with Step 4.**

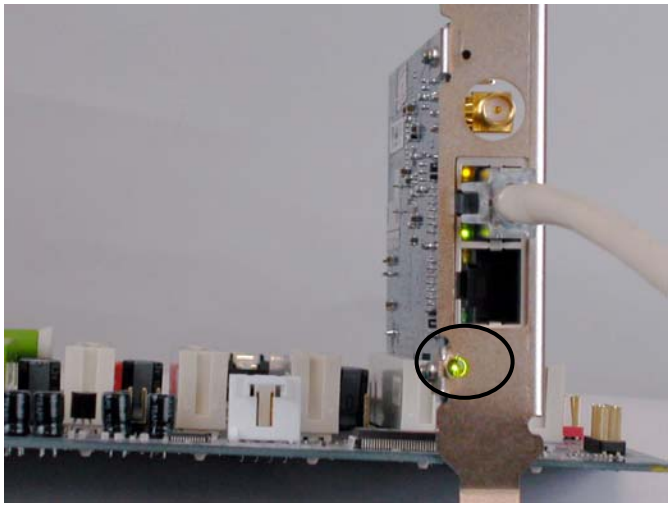


Figure 2-1 – Green power LED indicates normal state.

Step 3: **[Steps 3 – 5: Older Motherboards Only]**

Some older motherboards don't deliver power through the PCI bus, in this case the green LED will not illuminate and you will need to install the power adapter interconnect. Unplug the main power cable from the motherboard. Attach the AirStream power adapter interconnect (included) to the PC MAIN power cable, and then plug the other end into your motherboard. (See Figures 2-2 & 2-3)

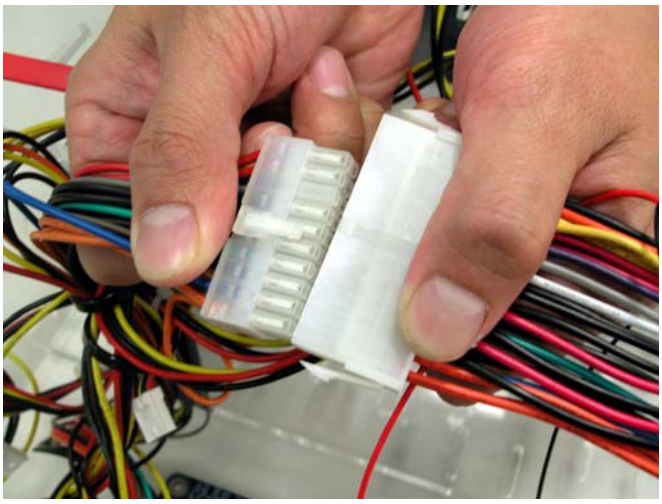


Figure 2-2 – Connect Power adapter interconnect (on right) to PC MAIN power cable.

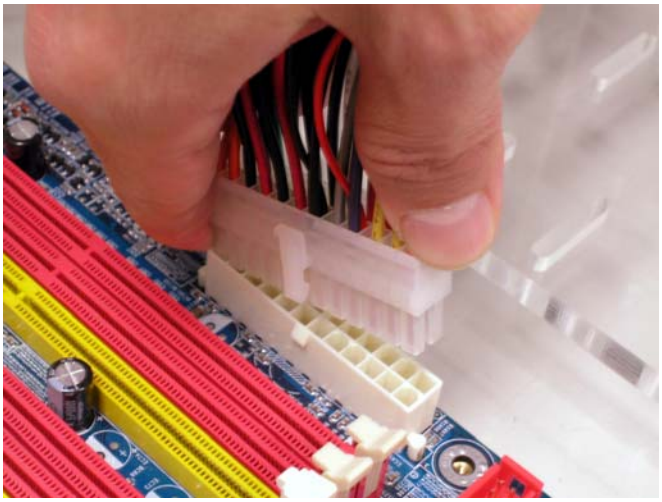


Figure 2-3 – Connect Power adapter interconnect to motherboards ATX power connector.

Step 4: On the power adapter interconnect, locate the two pin power connector wire, and attach it to the two pin power connector on the AirCruiser G (Figure 2-4).

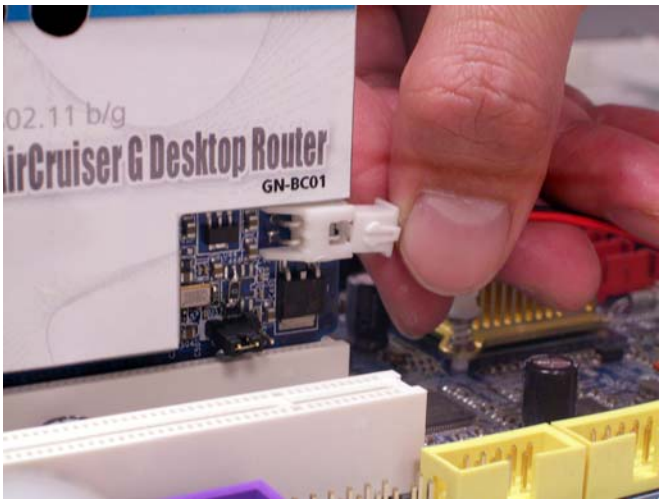


Figure 2-4 – Attach AirCruiser G power connector

Step 5: Locate the 3-pin jumper next to the power connector, and move it so as to cover the two rightmost pins. (Figure 2-5)

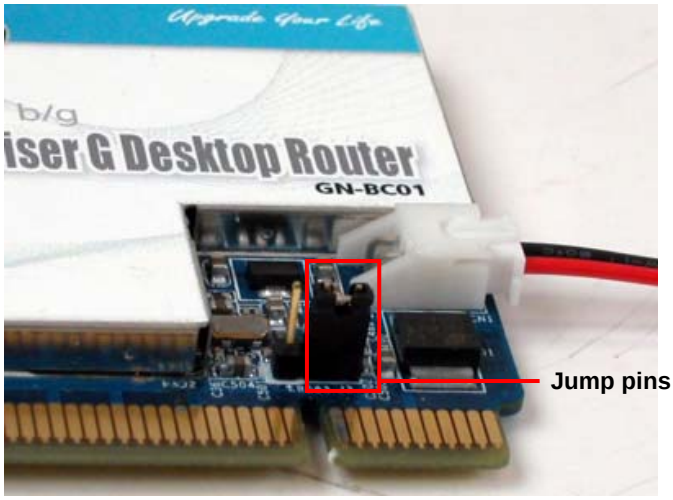


Figure 2-5 – Move pin jumpers to match position as shown

Hardware Installation Finished!

Please proceed to **Chapter 3 – Connections & Configuration**.

Chapter 3 Connections & Configuration

Making a Wired Connection

Now that you've installed the AirCruiser G, like any other router, you'll need to configure it with your ISP internet connection. This section will help you through the process, which is made easier by SmartSetup 3.

The AirCruiser G has one WAN (Internet) port and one LAN (network) port. (The WAN port being the one closest to the antenna connector). You can configure the AirCruiser both wirelessly or wired, however we strongly recommend using the wired connection for initial setup, as it will make the procedure less error prone.

Step 1 Screw in the antenna, and then connect the Internet cable coming from your ADSL/Cable modem into the WAN port of the AirCruiser Wireless PCI Router. (See figure 3-1 below)

Figure 3-1 – WAN (Internet) cable

Step 2 Using the RJ45 patch cable provided, plug one end into the LAN port of the AirCruiser G, and the OTHER END into the LAN port of your Desktop NIC or your LAN port of a Notebook PC. (See figure 3-2 below)

Figure 3-2 – LAN (network) cable for initial setup.
The other end will go into your Notebook PC or Desktop NIC.

Your wired configuration at this point should look like the figure 3-3 below. Later, you can remove the short Ethernet patch cable, and install a switch, creating your own private LAN.

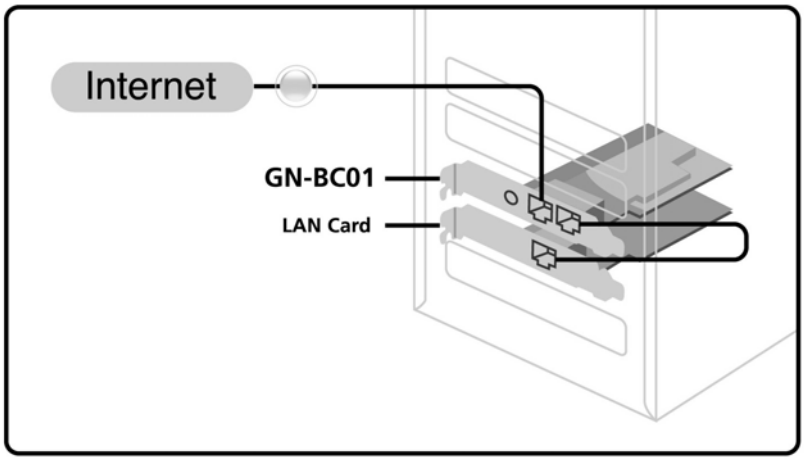


Figure 3-3 – Cabling for initial setup.

Please proceed to **Chapter 4 – Configuring the AirCruiser G Desktop Router** to complete installation.

Chapter 4
Configuring the AirCruiser G Desktop Router

Step 1 Power ON your computer, and then launch the web browser of your choice. In the examples below, we use Mozilla Firefox.

Step 2 SmartSetup 3 should automatically detect your wireless network and open up the web-based configuration screen. If it does not, simply type **192.168.1.254** into the address bar of your web browser.

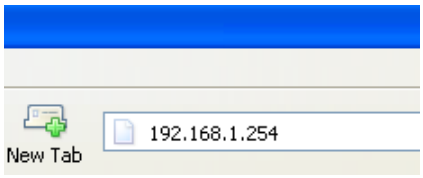


Figure 4-1 – Access the AirCruiser G configuration menu using any web browser.

Step 3 SmartSetup 3 should open the web-based configuration screen, and auto detect your type of Internet Connection (PPPoE, Static, Dynamic, etc.) if it does not, simply type `192.168.1.254` into the address bar of your web browser. When prompted for username/password type: `admin` for both.

Types of Broadband Internet connections automatically detected by SmartSetup 3:

Dynamic IP Address If you use a dynamic IP address, you can directly connect to Internet without having to login. The Router will then automatically restart.

PPPoE Most common type of ISP Connection. If you use a PPPoE connection, please enter your ISP user ID and password.

Static IP address If you use a static IP address, please enter your WAN IP address, WAN subnet Mask, WAN Gateway, and DNS information provided by your ISP.

Step 4 When prompted by the dialog box for username and password, key in the default user name: **admin** and the default password: **admin** Press OK.

Figure 4-2 – The username/password is admin/admin.

Step 4 The AirCruiser G Desktop Router's **web browser based** configuration screen will prompt you for certain ISP related information (Figure 4-3). You can contact your ISP service provider for this information at any time. After entering the ISP information, click the **Finish** button. The Router will save and restart automatically.

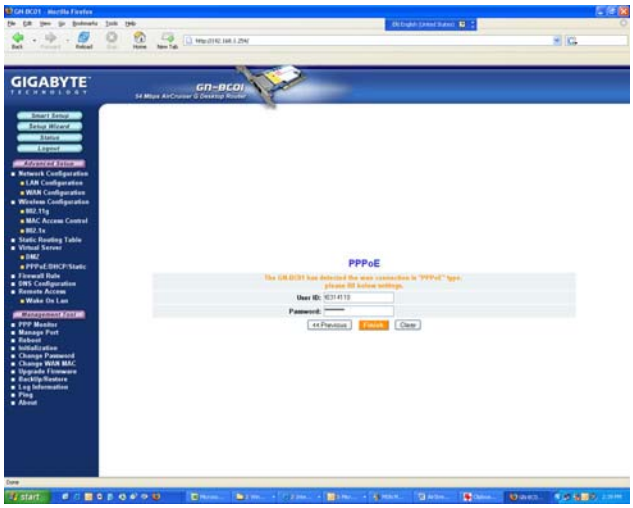


Figure 4-3 – Initial ISP Internet setting for the AirCruiser G.

The AirCruiser G Desktop Router is now active! The SSID (Network Name) is GIGABYTE, and should now be visible from any wireless 11b or 11g adapter.

Optional: Setting up a home LAN configuration using the AirCruiser G Desktop Router

Setting up a Local Area Network using the AirCruiser G is exactly the same as you would do for any other wireless router, just connect a switch to the LAN port of the AirCruiser G, and then attach your network devices to the switch (figure 4-4). By connecting PC's to the 10/100 Switch as shown, we have three nodes on the new LAN - the two Desktop PC's (LAN 1 & LAN 2) and the NIC Card in your main Desktop (LAN 3).

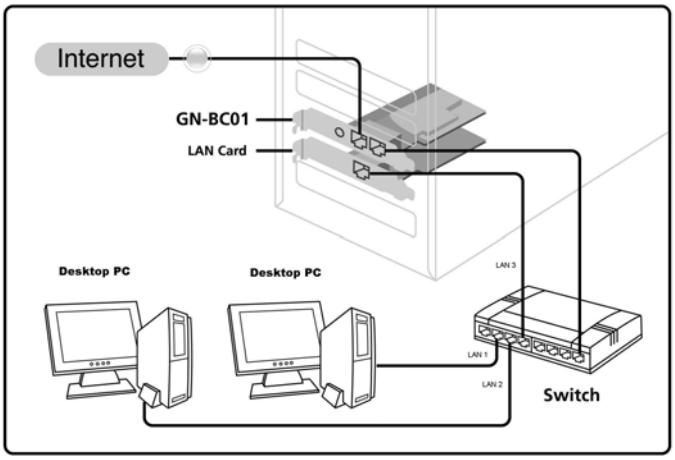


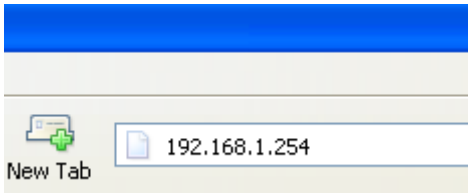
Figure 4-4 – Typical home LAN using AirCruiser G.

Chapter 5
AirCruiser G Desktop Router Settings

The default settings of your AirCruiser G Desktop Router generally do not require modification. However, from time to time you may want to change settings such as firewall or SSID number. You can change AirCruiser Wireless PCI ROUTER wireless router settings using an Internet browser (Internet Explorer or Netscape Navigator) and accessing the web-based utility.

Login to the AirCruiser G Desktop Router

Whenever you want to change Router settings, you'll need to open the AirStream web configuration utility. In the address bar of your browser, type **192.168.1.254** and then press the **ENTER** key.



When you login, you will be greeted by the AirCruiser Welcome Screen (Figure 5-1). On the left panel are the Advanced Settings, Management Options, and SmartSetup wizards which allow easy access to the AirCruiser G configuration settings.

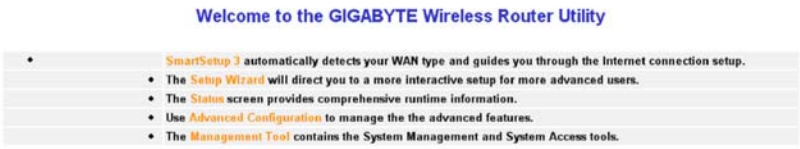

Welcome to the GIGABYTE Wireless Router Utility
SmartSetup 3 automatically detects your WAN type and guides you through the Internet connection setup.
The Setup Wizard will direct you to a more interactive setup for more advanced users.
The Status screen provides comprehensive runtime information.
Use Advanced Configuration to manage the the advanced features.
The Management Tool contains the System Management and System Access tools.

Figure 5-1 – AirCruiser G Main Login Screen

AirCruiser G Desktop Router Configuration Utility

In Chapter 6 below, each of the configuration options will be introduced and its parameters explained. Normally, users will not need to adjust any of the AirCruiser G Desktop Router settings, however GIGABYTE recommends you setup some form of security, or at least hide your SSID (Network Name).

After you have completed making modifications to the configuration settings of your AirCruiser G, please click the **Logout** button to end your session.

Note: For security reasons, you will be automatically logged out of the Configuration Utility after 5 minutes of inactivity.

Chapter 6 Advanced Settings

In this chapter, details for configuring the advanced settings of the AirCruiser G Desktop Router are explained.

The Network Configuration Screen

The **Network Configuration** screen consists of two sub-areas: **LAN Configuration** (which also includes DHCP Options, and Forced IP-MAC Mapping), and **WAN Configuration** in which you can configure up to 4 backup WAN connections (other internet service providers accounts) in the event your primary WAN connection fails.

The LAN Configuration Tab

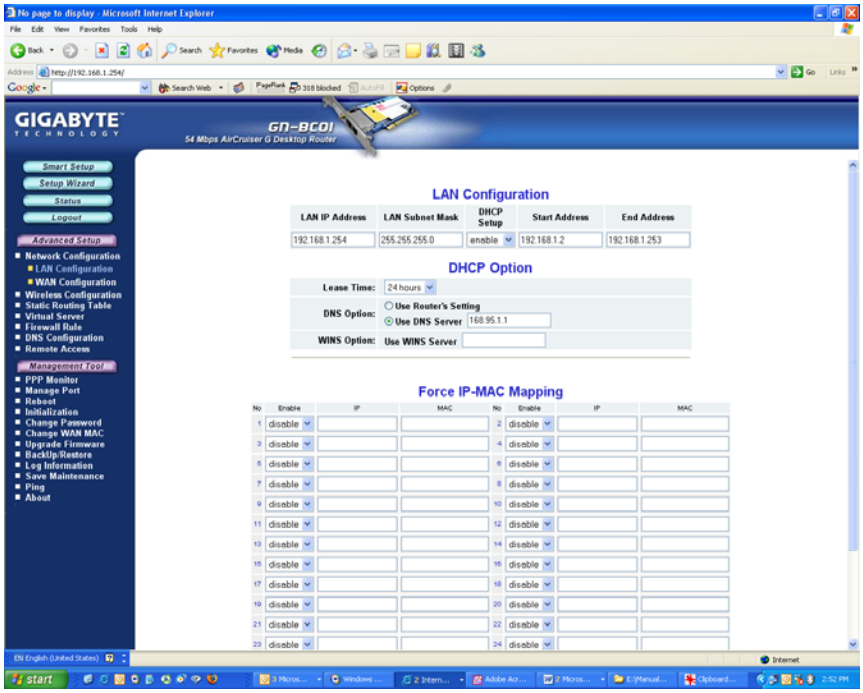


Figure 6-1 – LAN Config Screen

LAN Configuration

Allows you to modify the LAN parameters, and if you want to enable DHCP automatic IP address assignments, you can enable it here, and specify a Start and End address for the IP range.

DHCP Option

The DHCP server "leases" out address for specific times (Time To Live) to the various hosts. If a host does not use a given address for some period of time, that IP address can then be assigned to another machine. When assignments are made or changed, the DHCP server must update the information in the DNS server. The AirCruiser G DHCP Lease Table displays the associated IP/MAC assignment and Time To Lease.

Force IP-MAC Mapping

Allows you to manually assign a specific IP address to a specific network device (MAC address) on the network. This will be updated in the ARP table automatically.

Verify the settings, and then apply these to your router, click the **Submit** button.

The WAN Configuration Tab

Select the type of Internet Service you are using, and press the **NEXT>>** button to continue with modifications.

Note: If you don't know which type of Internet connection you have, click SmartSetup button, and it will auto detect this for you.

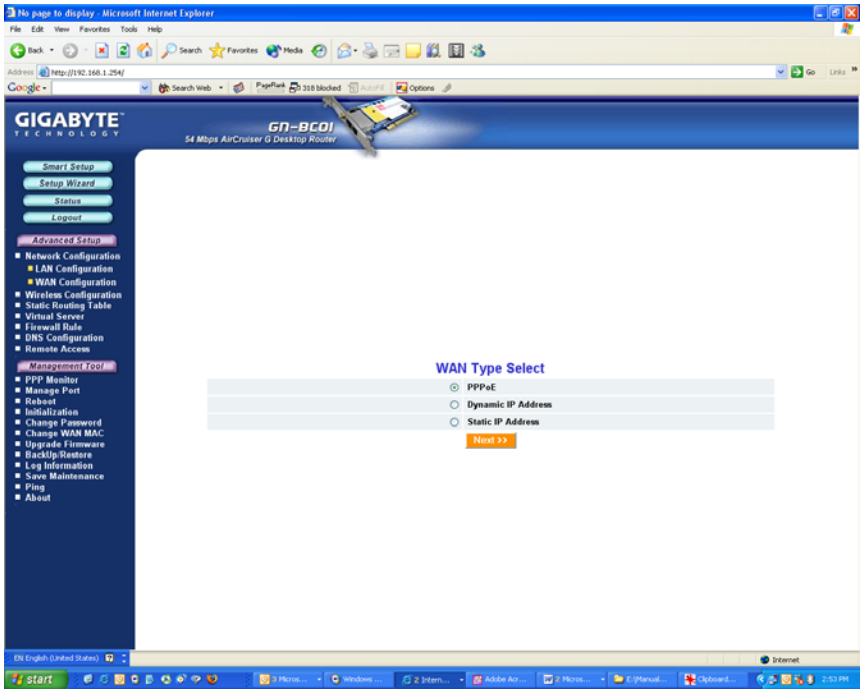


Figure 6-2 –WAN Config Screen

A screen based on the Internet (WAN) connection type you selected will appear and provide parameter fields.

WAN Configuration – Dynamic IP Address

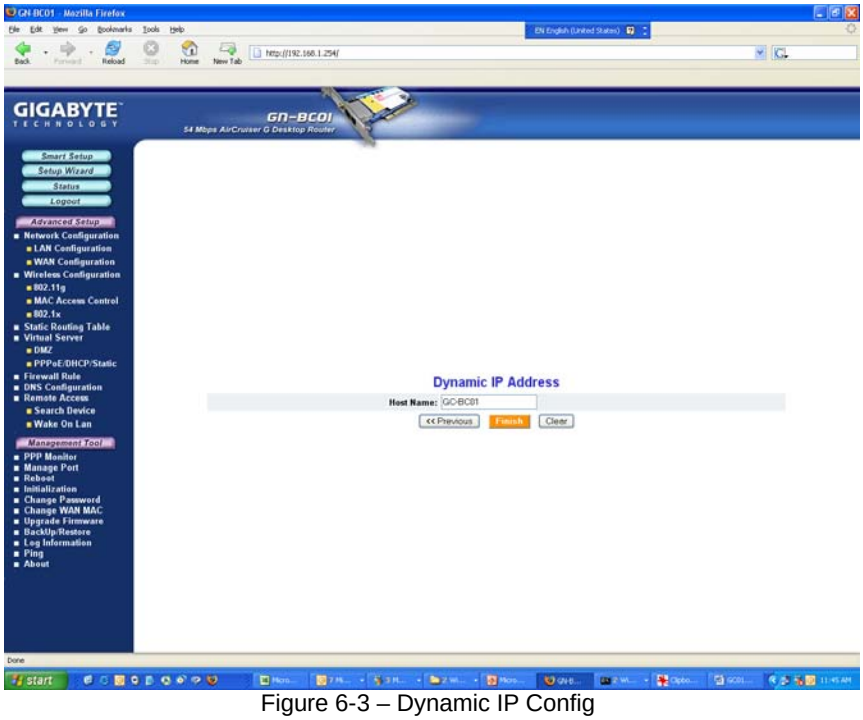


Figure 6-3 – Dynamic IP Config

Host Name

This is a free form field (Default BC-01) which assigns a host name to your IP connection. You may choose a name of your preference, or leave the default. Press Finish.

WAN Configuration - PPPoE

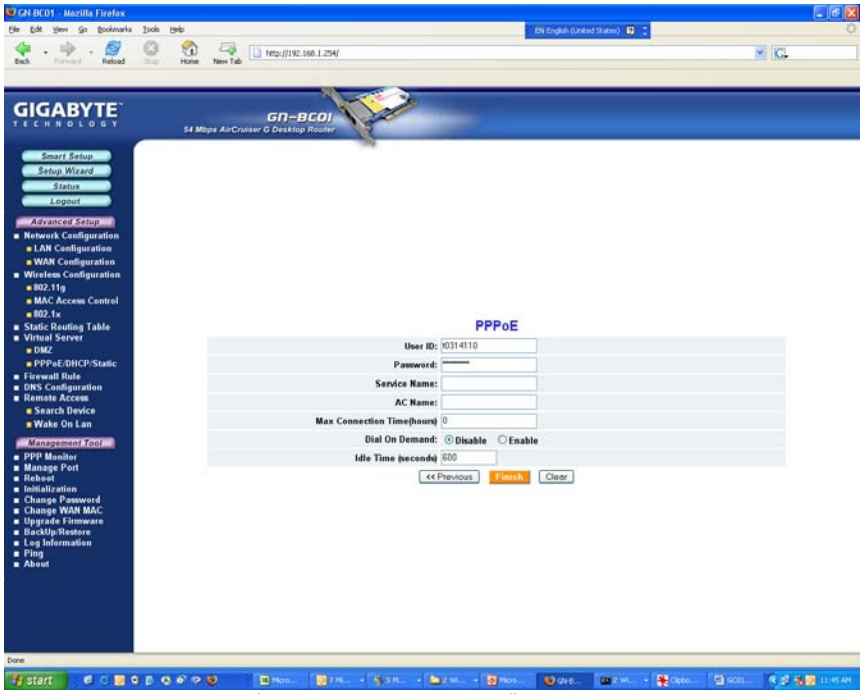


Figure 6-4 – PPPoE Config Screen

Your Internet Service Provider will supply you with the following account information you will need:

- **ISP Name**
- **User ID/Password**
- **Service Name**
- **AC Name**
- **DNS1 and DNS2 Address**
- **DNS Domain Name**

Enter the information provided by your ISP in the fields provided.

WAN Configuration Tab - Static IP Address

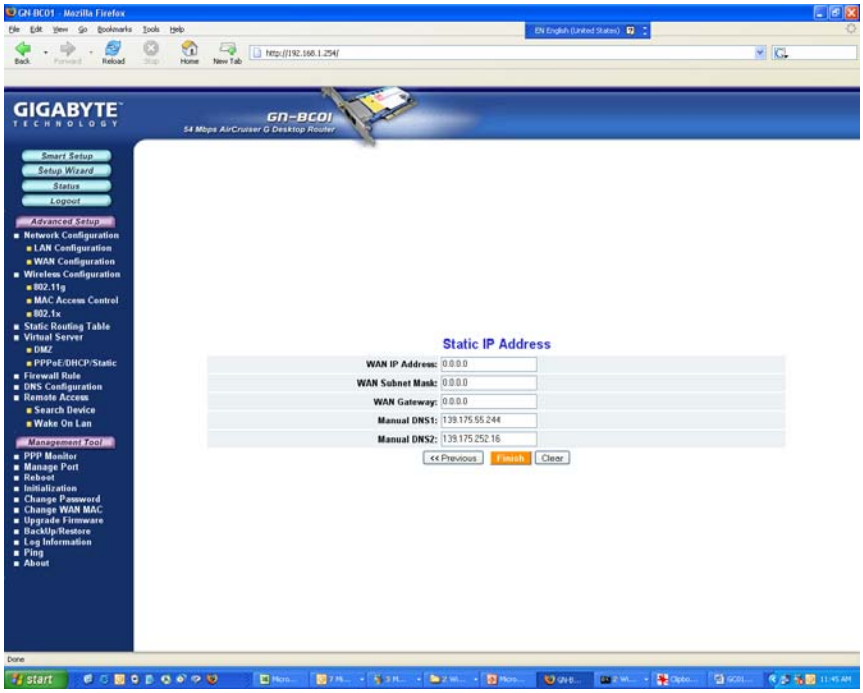


Figure 6-5 – Static IP Config screen

Your Internet Service Provider will supply you with the following account information you will need:

- **ISP Name**
- **WAN IP Address**
- **WAN Subnet Mask**
- **WAN Gateway**
- **DNS1 and DNS2**
- **DNS Domain Name**

This information is all provided by your ISP. In the event that your ISP has assigned you several Static IP addresses, you will only need to one.

The Wireless Configuration Screen

The **Wireless Configuration** screen allows you to configure the Router's WLAN function.

The 802.11g Tab

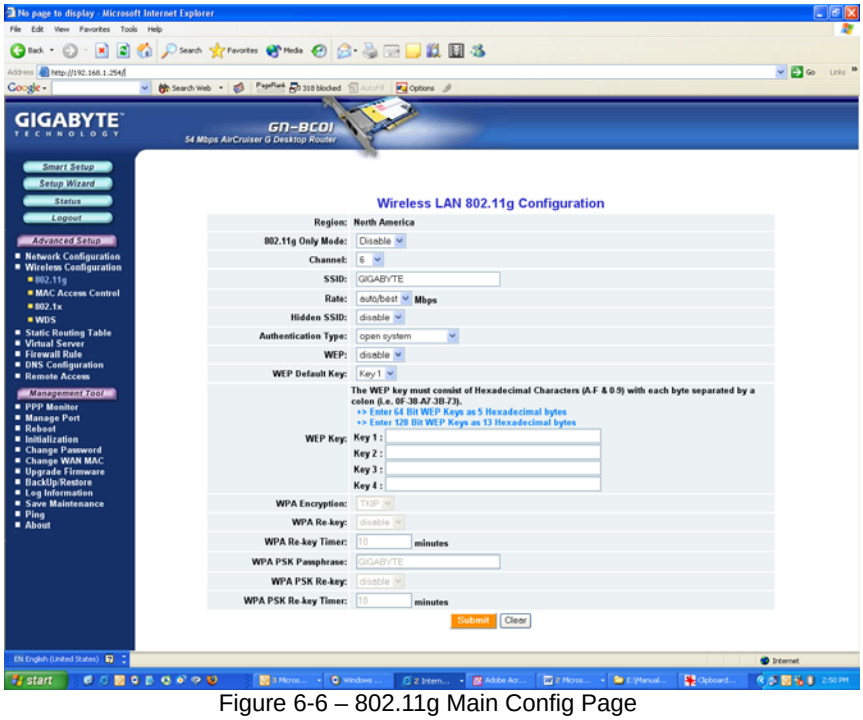


Figure 6-6 – 802.11g Main Config Page

Region

Indicates the geographical region you are in. Verify that the region indicated is correct. If not, please contact your local distributor or dealer immediately.

802.11g Only Mode

The mixture of both 11b and 11g traffic on your wireless network results in the reduction of the network performance. For this reason, the **802.11g Only Mode** allows you to restrict all traffic to 11g (54Mbps) traffic only. Keep in mind, however that enabling this feature comes at the expense of eliminating all 11b based traffic by the AirCruiser G. Enable will restrict all traffic to 802.11g traffic, while disable will allow a mixture of both 11b and 11g. The default setting is **Disable**.

Auto Channel Select

The Router uses channel 6 as the default channel. Enabling Auto Channel Select allows the Router to auto-select a non-conflicting channel.

Channel

The channel may be manually changed (if there are other wireless networks operating in your area) by selecting a channel from the drop-down list.

SSID

The SSID (Service Set Identifier) is the name of your wireless network. The SSID is up to 32 ASCII characters in length and case sensitive (i.e. Letters in upper case "**A~Z**" and lower case "**a~z**" are unique). The default SSID is "**GIGABYTE**". To change the SSID, type in the SSID you want to use in the SSID field and click **Submit**. If you make a change to the SSID, any wireless devices on your network must also be reconfigured to connect to the new network name.

Rate

Select a wireless data transmission rate from the drop- down list. The default setting **auto/best** automatically detects and sets the optimum transmission rate.

Hidden SSID

For security purposes, you may choose to hide your network's SSID by selecting **enable** from the drop-down list. This will prevent computers scanning for the presence of wireless networks to detect your network name. The default setting is **disable**.

Authentication Type

Select an authentication type from the drop-down list. The default setting is **Open System**.

Open System: The sender and the receiver do NOT share a secret key. Each party generates its own key-pair and asks the receiver to accept a randomly generated key. Once accepted, this key will only be used for a short period of time. Afterwards, a new key will be generated and agreed upon.

Shared Key: Authentication is based upon a secret key shared by both the sender and the receiver. If **Shared Key** is selected, you cannot choose the WEP **disable** option.

WPA Pre-shared key:, The WPA Pre-shared Key authentication standard uses a password or " key" between 8 and 32 characters. This encryption key is changed after every dialog box using the Temporary Key Integrity Protocol (TKIP), which allows users to change keys based on dialog box and automatically synchronize keys between devices on the network. The TKIP encryption algorithm is stricter than the one used by WEP but is based on the same standard.

WPA: The 802.1x authentication protocol, allows users to authenticate wireless network access through a RADIUS Server and is a required by WPA standard. If no RADIUS Server exists in your network environment, you still can use WPA through the use of WPA Pre-shared Key.

WEP Key

The AirCruiser G supports two WEP standards: **64-bit,152-bit**. Select either **64-bits** or **152-bits** from the drop-down list activate WEP encryption. The **64-bits** encryption uses 40 bits as a secret key, (user-defined) and the remaining 24 bits are reserved. The **128-bits** encryption uses 104 bits as a secret key, (user-defined) and the remaining 24 bits are reserved.

WPA Re-key

Enabling the requirement for WPA rekeying of a Passphrase for increased security. Default is **disable**.

WEP Re-key Timer

Specify time (in minutes) for expiration of the current WPA Key.

WPA PSK Passphrase

The Passphrase must be between 8 and 64 characters.

WPA PSK Re-key

A user without a RADIUS server, may specify generating a new WPA PSK key more frequently than each time he connects to the network.

WPA PSK Re-key Timer

Specify time (in minutes) for expiration of the current WPA PSK key

The MAC Access Control Tab

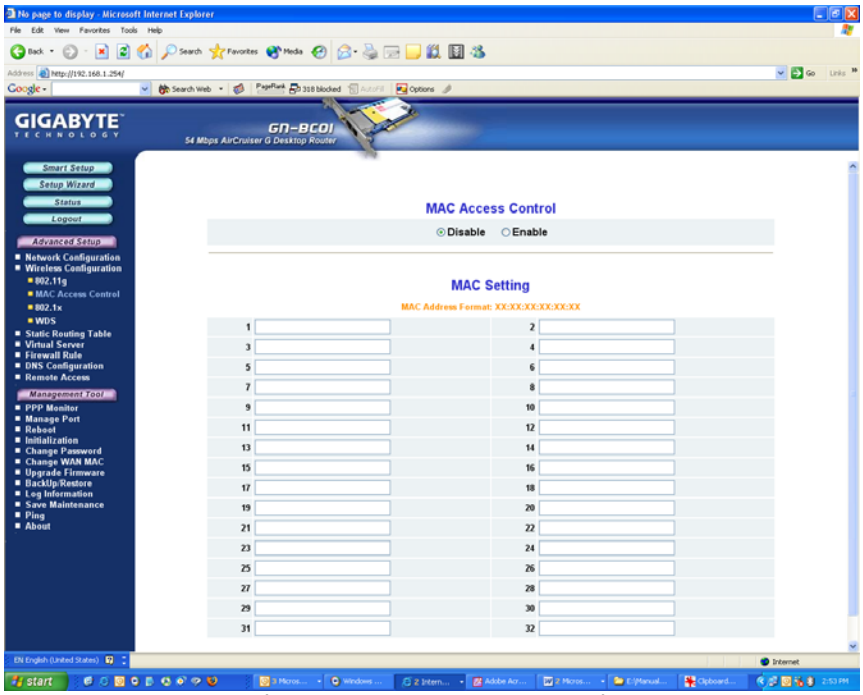


Figure 6-7 – MAC Access Control

The **MAC Access Control** screen allows you to specify the Media Access Controller (MAC) address of up to 32 devices on your network. Only those devices listed in the table will have access to transmit data through the AirCruiser G. In this way, even if someone manages to obtain all the information necessary to connect to your network, if their MAC address is not permitted, they still cannot connect. Keep in mind, however that MAC addresses can be spoofed, so it is not a panacea but rather another component of your existing security process. Enable the feature, then key in the MAC addresses to be allowed. Enter the MAC in the form separated by colon. The default setting is **Disable**.

The RADIUS Server Configuration Tab

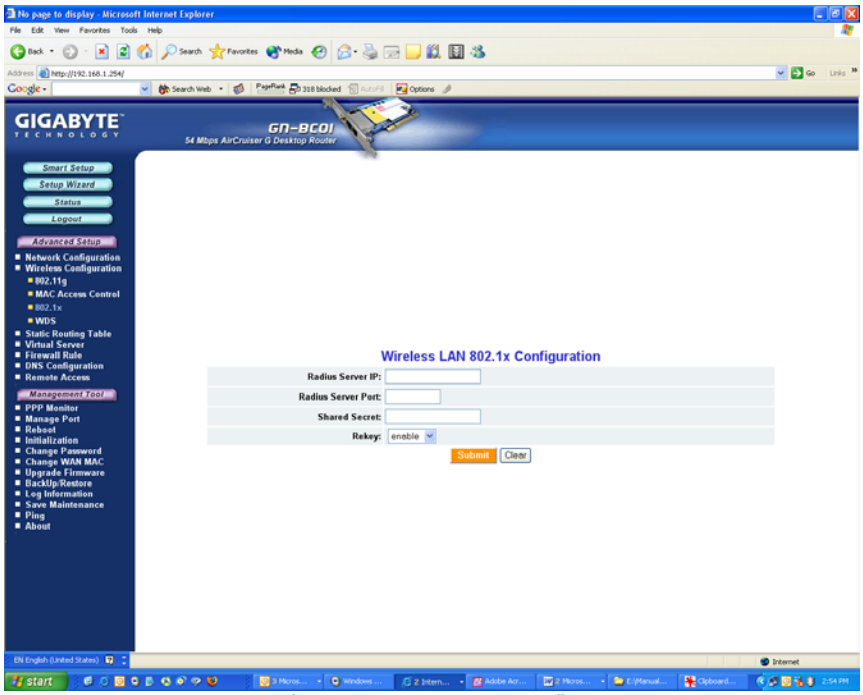


Figure 6-8 – RADIUS Config

Your AirCruiser G supports 802.1x and RADIUS Server authentication. RADIUS provides a centralized, server-based authentication of client access to the network.

RADIUS Server IP	Assign an IP address for the RADIUS Server.
RADIUS Server Port	Enter a value within the range 1~65536 for the port.
Shared Secret	Enter a password up to 256 characters (uppercase "**A**~**Z**", lowercase "**a**~**z**" or numeric "**0**~**9**") in length.

Verify the settings, and then to apply these to your network, click the **Submit** button.

The Static Routing Table Screen

The **Static Routing Table** displays the AirCruiser G Desktop Router routing settings. To add or modify, enter a value into the field and click the **Submit** button.

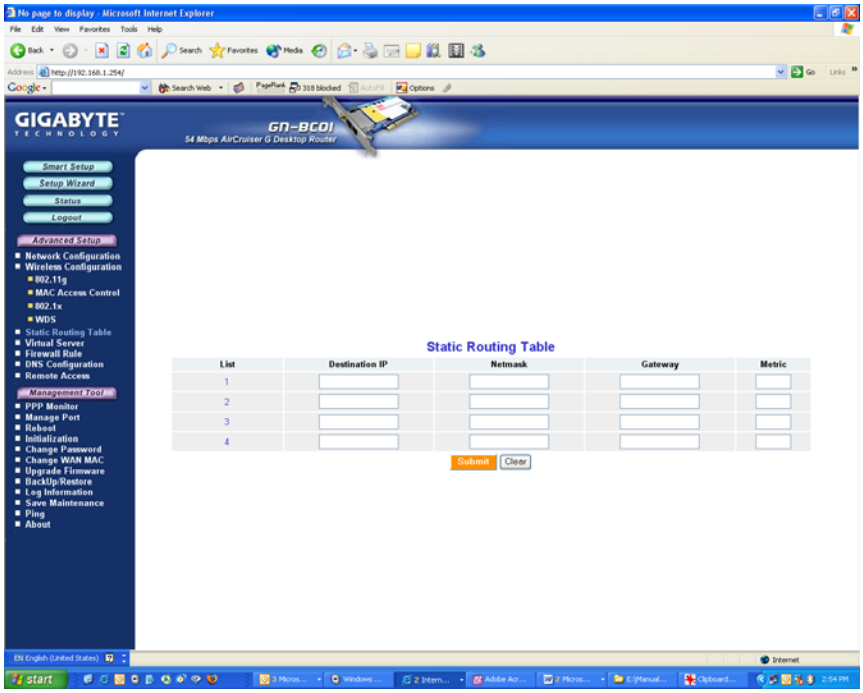


Figure 6-9 – Static Routing Table

Destination IP

Enter the Destination IP address that will be assigned to a specific network or host.

Netmask

Enter the netmask associated with the Destination IP.

Gateway

Enter an IP address that will be assigned to the interface connecting to subnets.

Metric

The "**Metric**" value is a number between 1 and 15 that represents the number of Routers between your network and the destination. Generally, setting the Metric value as either 2 or 3 is sufficient for most applications. If this is a direct connection, please set the value to 1.

The Virtual Server Screen

The PPPoE/DHCP/Static Tab

A Virtual Server allows computers on the WAN side of the network to connect with a PC server on the LAN side of the network.

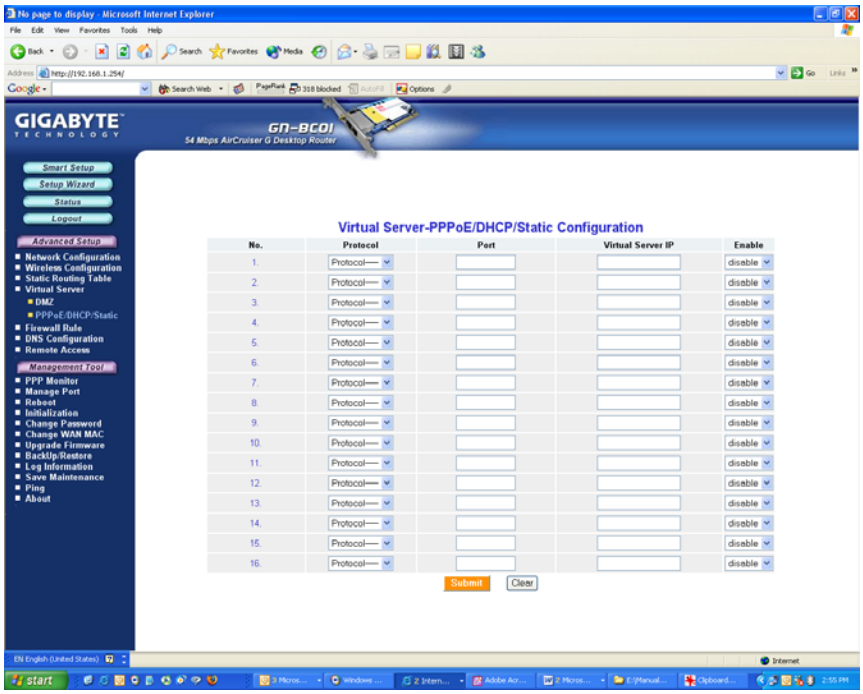


Figure 6-10 – Virtual Server setup

For example, a PC on the LAN side with an IP address of 192.168.1.1 would have the following virtual server settings:

- **Protocol:** TCP
- **Port:** 21
- **Virtual Server IP:** 192.168.1.1
- **Enable:** enable

In this case, any PC on the WAN side of the network can connect to the internal FTP server (192.168.1.1) using the IP address on the WAN end of the AirCruiser G Desktop Router.

The DMZ Tab

The DMZ feature allows you to specify the IP address of the computer that will be placed outside the firewall of your network.

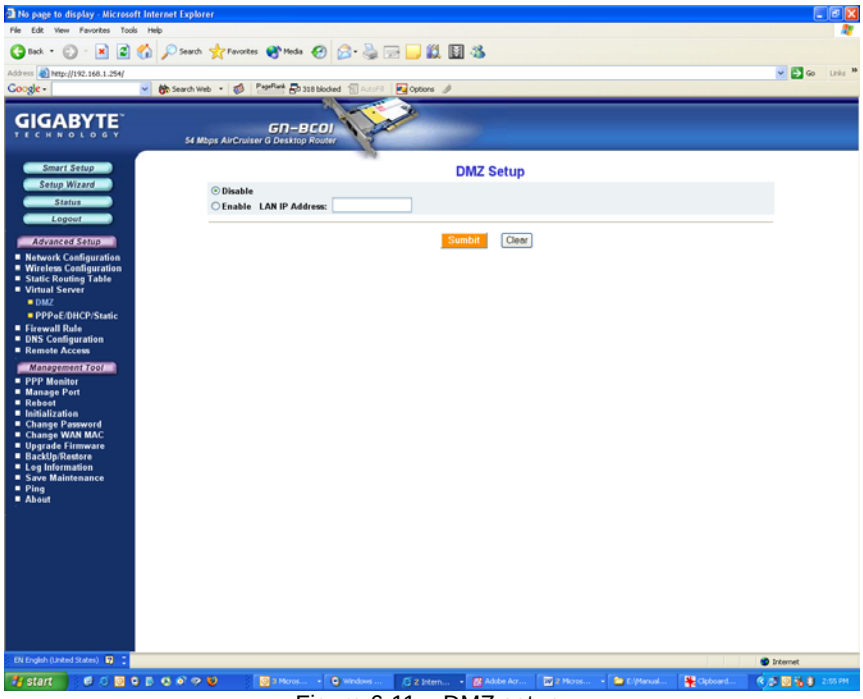


Figure 6-11 – DMZ setup

With a firewall setup, it is often necessary to place some clients outside of the firewall while leaving the others protected. You can do this using a Demilitarized Zone (DMZ) to test or configure some applications (e.g. Internet games, video conferencing, or VPN connections) or create a server connecting to the Internet through the Intranet. Enter the IP Address of your computer (e.g. 192.168.1.2) into the LAN IP Address field and click the **Submit** button.

	Note: DMZ servers pose a security risk. A computer designated as the default DMZ server loses much of the protection of the firewall, and is exposed to exploits from the Internet. If compromised, the DMZ server can be used to attack your network.

The Firewall Rule Screen

The Firewall Rule screen displays your network security settings. Use this screen to quickly create network security policies to prevent unauthorized access to your network.

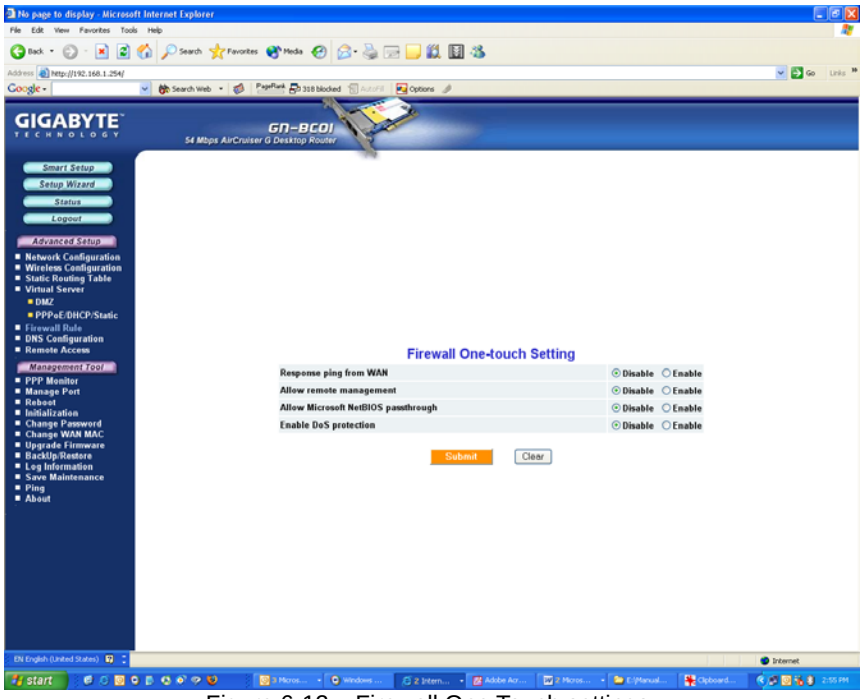


Figure 6-12 – Firewall One Touch settings

Response Ping From WAN

When enabled, prevents this Router and its privately assigned IP addresses from being broadcasted to the Internet.

Allow Remote Management

When enabled, allows remote configuration access via the Internet (WAN), else only local (LAN) access is allowed.

Allow Microsoft NetBIOS Pass-through

A File and Printer sharing security, that when enabled, only allows NetBIOS.

Enable DoS Protection

When enabled, Denial of Service type attacks are prevented.

The DNS Configuration Screen

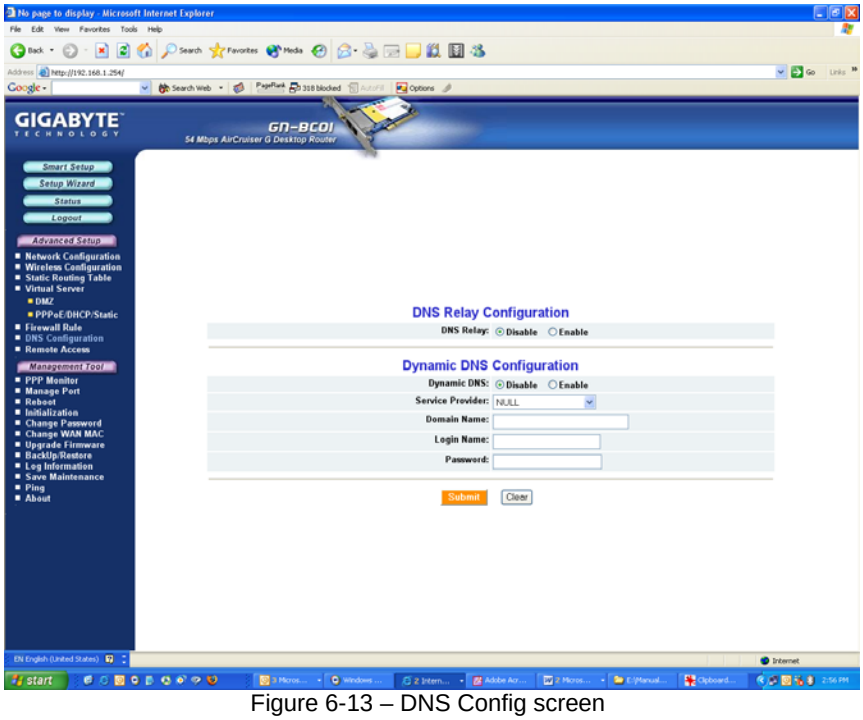


Figure 6-13 – DNS Config screen

DNS Relay

DNS Relay will set your PC's DNS entries to point to the Router's Gateway address, which will then forward DNS queries to the DNS server used by the Router. This is needed when using DHCP to assign IP address to the PC's in you LAN. The default value of DNS relay is **Enable**.

Dynamic DNS

The AirCruiser G Desktop Router offers a **Dynamic Domain Name Server** (DDNS) service that allows you to assign a fixed host and domain name to a dynamic Internet IP address. This gives Internet users the ability to connect with a virtual sever using a FQDN, rather than with an IP address. Before using this feature, you must first register an account with the dynamic DNS service. (http://www.dyndns.org)

Service Provider

From this pull down menu, enter the DDNS service with which you have membership.

Domain Name

This is the DDNS URL assigned by the DDNS service.

Login Name

Enter the User Name for your DDNS account.

Password

Enter the Password for your DDNS account.

Wildcards

If your dynamic DNS provider allows using wildcards in resolving your URL, you may select Enable to activate this function.

Remote Access Screen

Wake On LAN Table

With Wake-on-LAN, a router user can keep his systems turned off while away and simply click the Wake On LAN activation button on this page to remotely instruct the AirCruiser Gto boot up the host system. You also have the option of Wake On & Enable NETBIOS services of any PC in the local LAN Domain. For this feature, you need either the IP address or the MAC address of your LAN devices. Key in either values, click enable, and press Wake On LAN to perform the function.

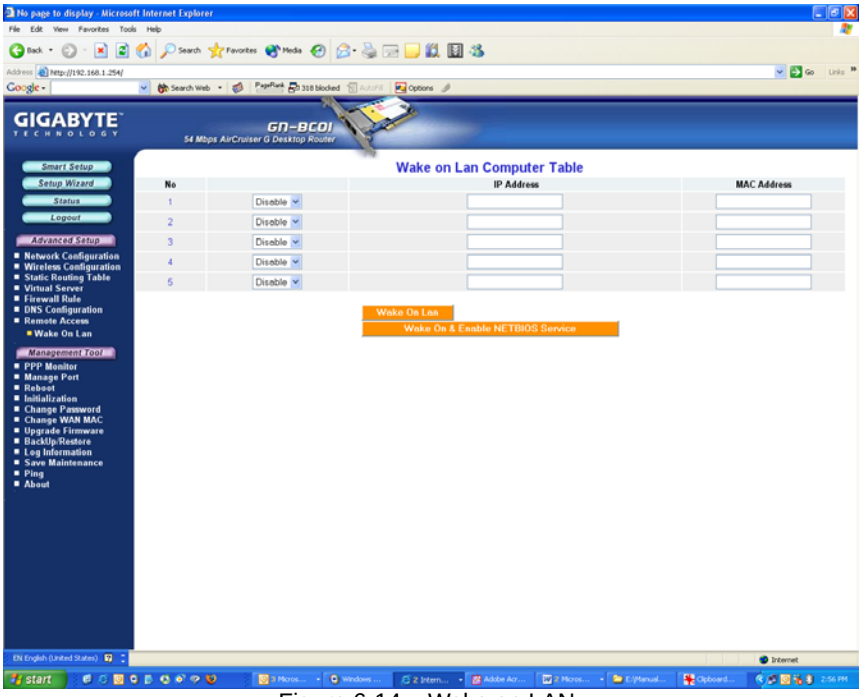


Figure 6-14 – Wake on LAN

IP Address

The IP Address of the LAN network device which you want to wakeup

MAC Address

The MAC Address of the LAN network device which you want to wakeup

Chapter 7 Using Management Tools

The instructions in this chapter will help you how to use the management tools of the web-based utility to effectively manage your AirCruiser G Desktop Router.

The PPP Monitor Screen

The **PPP Monitor** screen displays the WAN (Internet) connection status. Click the **Disconnect** button to end your current session. Click the **Connect** button to re-connect to the ISP.

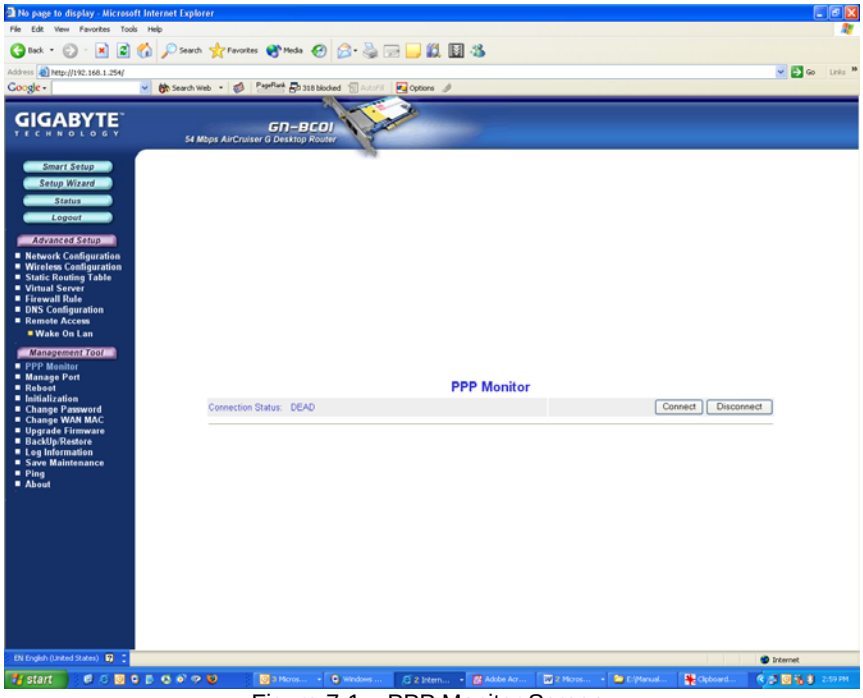


Figure 7-1 – PPP Monitor Screen

Manage Port Configuration Screen

The **Manage Port Configuration screen** allows you to change the port on which the AirCruiser's configuration utility runs. The default is Port 80 but users can change this to any port they wish (like 8080, 8000 or else port). In this case, to access the AirCruiser G configuration utility, you would type http://192.168.1.254:8080

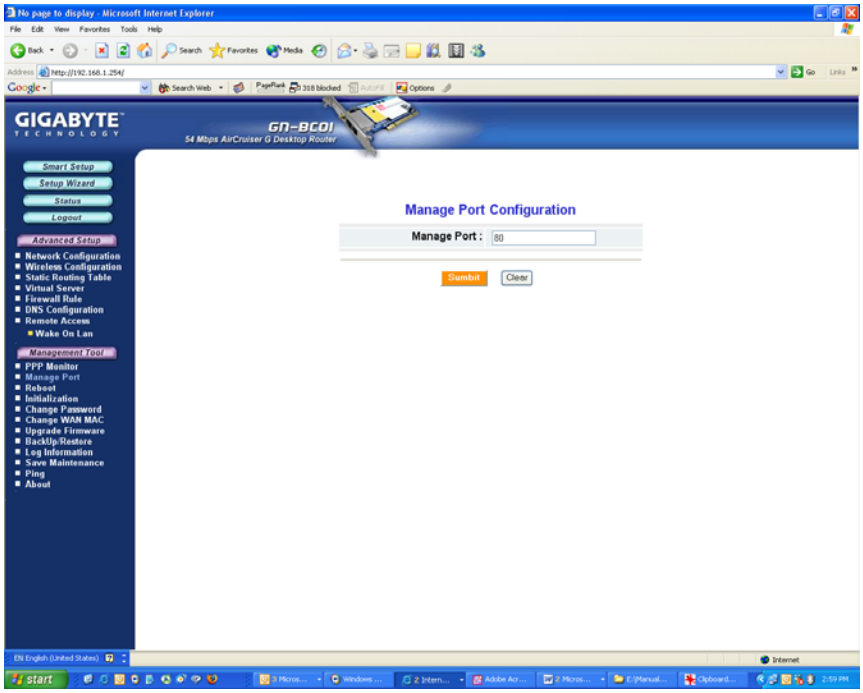


Figure 7-2 – Manage Port Config screen

The Reboot Screen

The Reboot screen allows you to reboot the AirCruiser G Desktop Router. You are also automatically brought to this screen after you confirm OK to any change of Router settings.

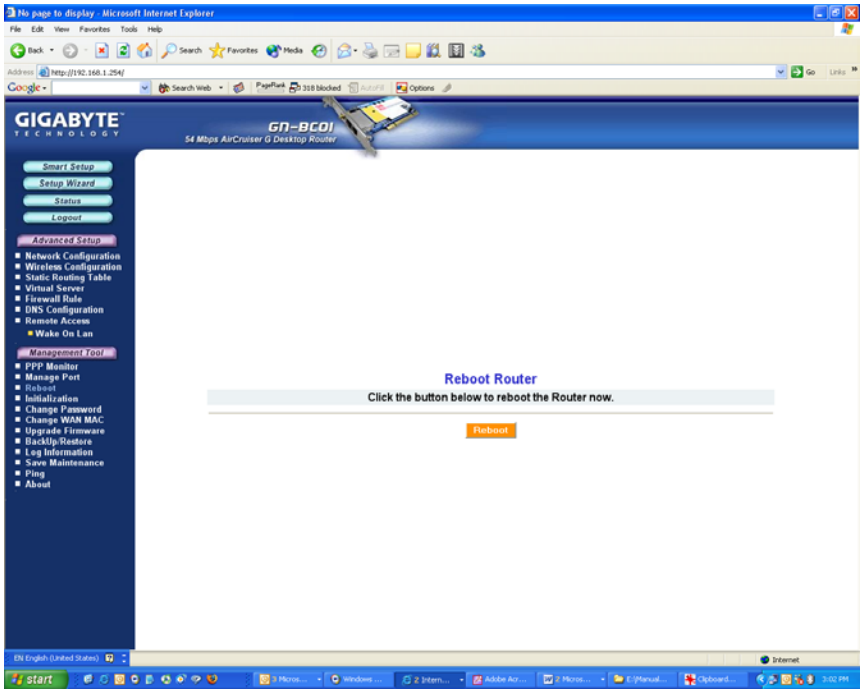


Figure 7-3 – Reboot Router

The Initialization Screen

The **Initialization** screen allows you to reset the AirCruiser G back to its original factory settings. To initialize the router, use the tip of a pencil or a paperclip to press and hold the **init** button for 5 seconds and release.

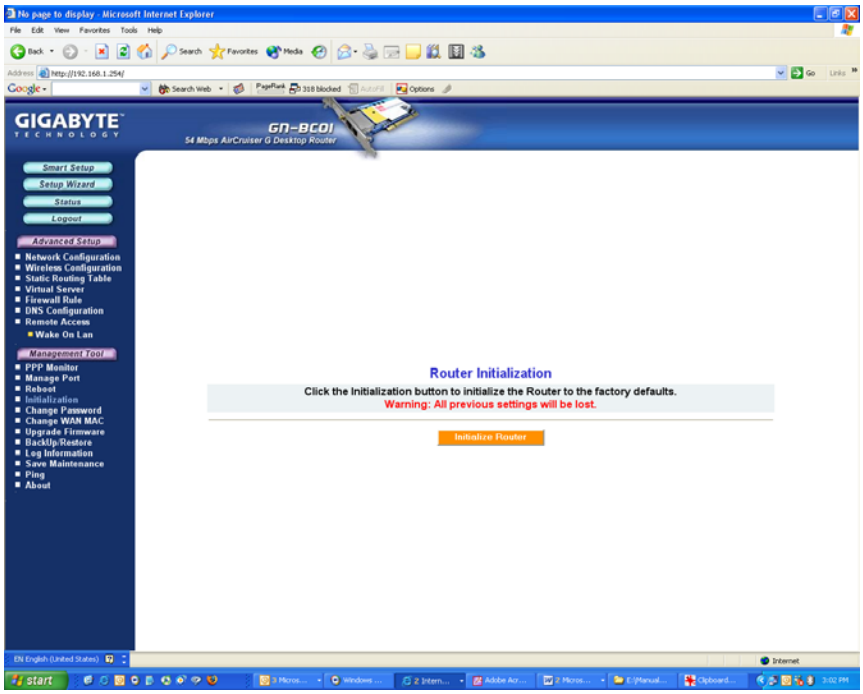


Figure 7-4 – Router Init Screen

The Change Password Screen

The **Change Password** screen allows the administrator to create a new password for the AirCruiser G. To change an existing password, enter your account and new password and after re-typing the password to confirm, click the **Submit** button.
Note: Remember to enter this *new* password when logging into the AirCruiser G Desktop Router.

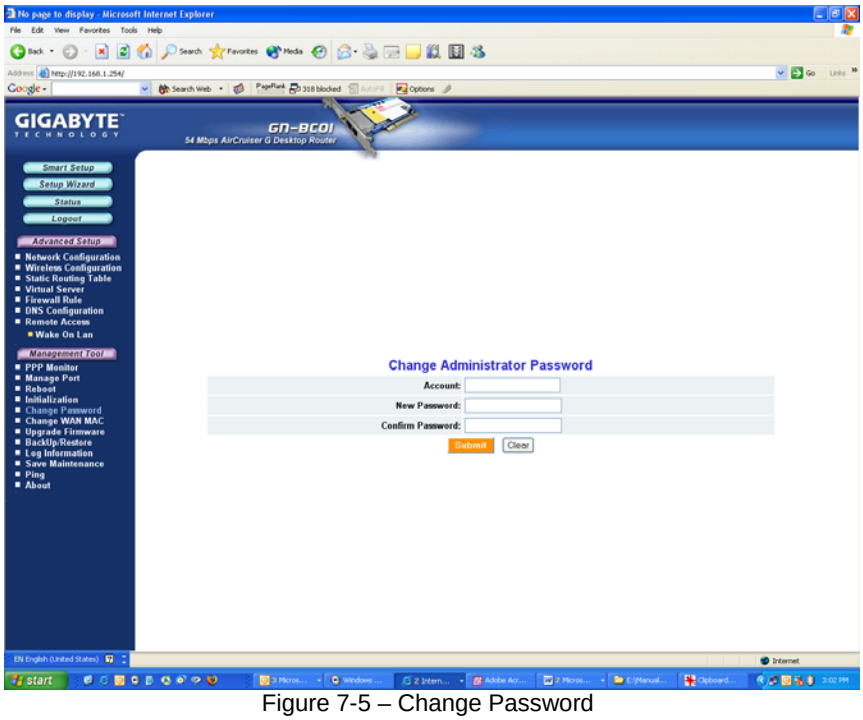


Figure 7-5 – Change Password

The Change WAN MAC Screen

The **Change WAN MAC** screen allows you to assign a new MAC address. If your ISP asks you to use the original MAC address, chose the **Assign WAN MAC** option and enter a new WAN MAC address in the **New WAN MAC Address** field and click the **Submit** button. If you want to restore the factory default MAC address, choose the **Restore Default WAN MAC** option and click the **Submit** button.

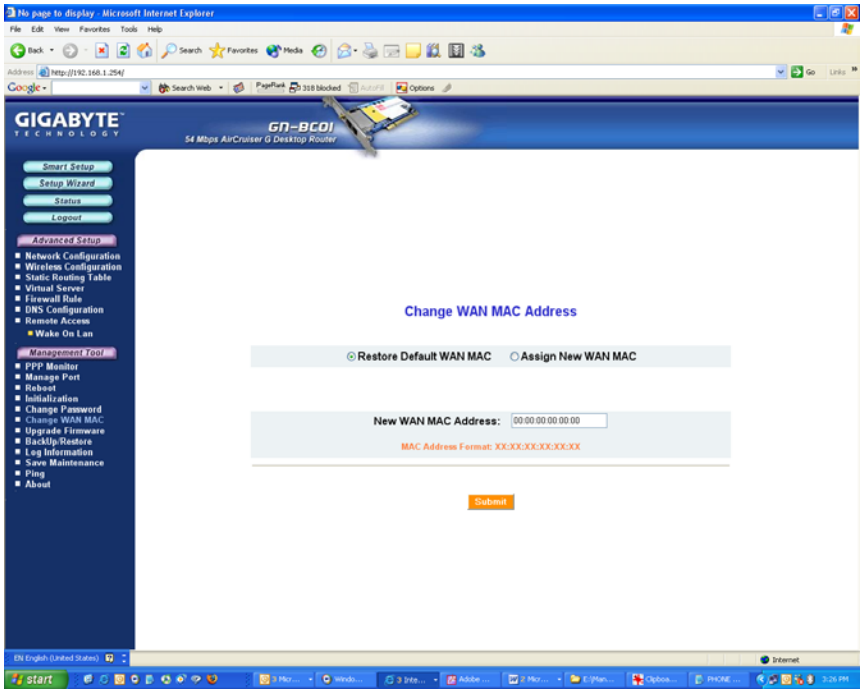


Figure 7-6 – Change WAN MAC address

The Upgrade Firmware Screen

The Upgrade Firmware screen allows you to update the current AirCruiser G Desktop Router firmware to the latest version directly from the GIGABYTE website. Click the Browse button to locate the firmware file which you just downloaded from the GIGABYTE website, and then click **Upgrade**.

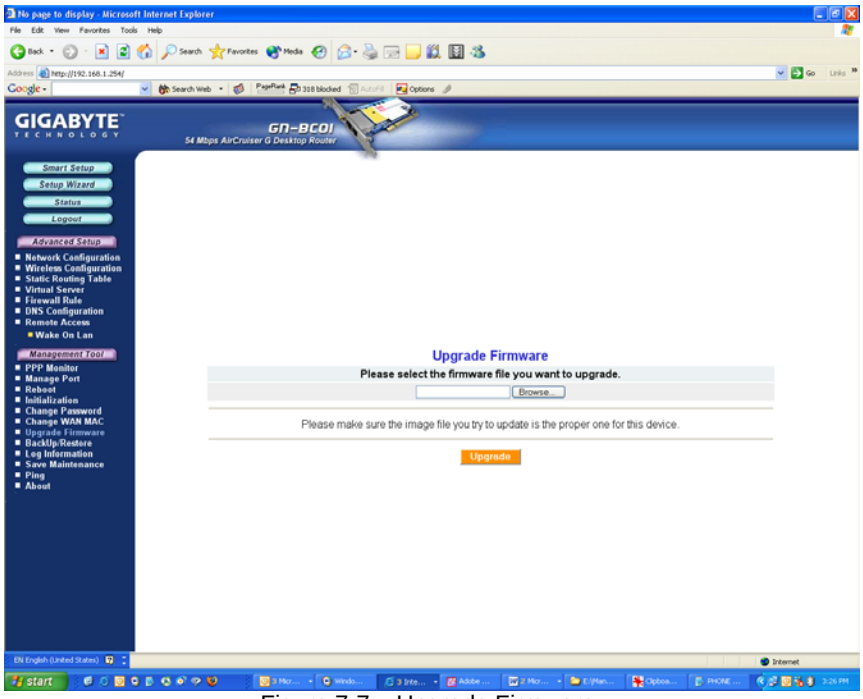


Figure 7-7 – Upgrade Firmware

The Backup / Restore Screen

The **Backup / Restore** screen allows you to save the current configuration settings of the AirCruiser G Desktop Router as a temp file onto your computer. To revert the Router back to a previously saved configuration settings, click the **Browse** to locate the saved configuration file. Then, click the **Restore** button.

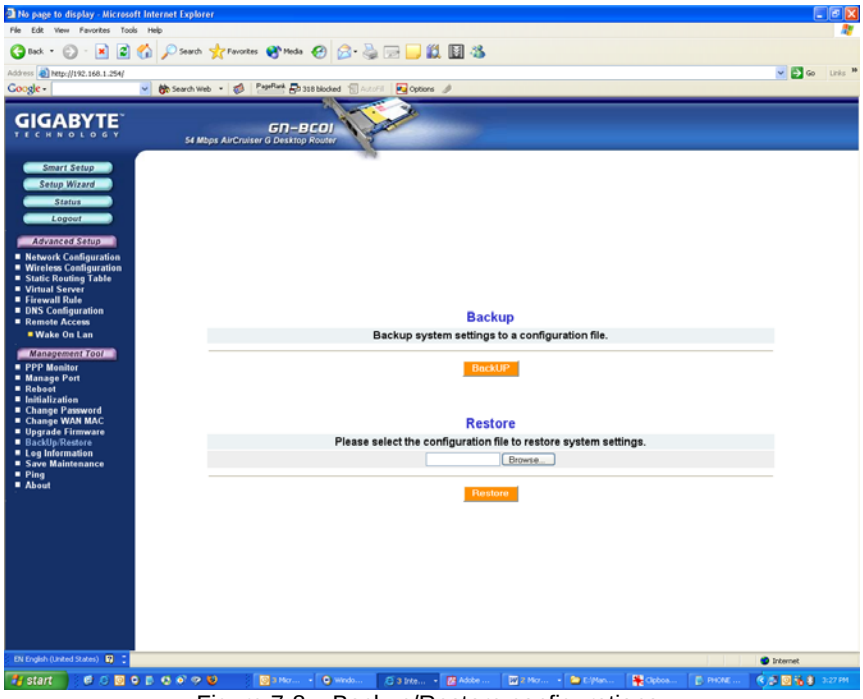


Figure 7-8 – Backup/Restore configurations

The Log Information Screen

The AirCruiser G Desktop Router keeps logs of all port activity and events which cause a state change.

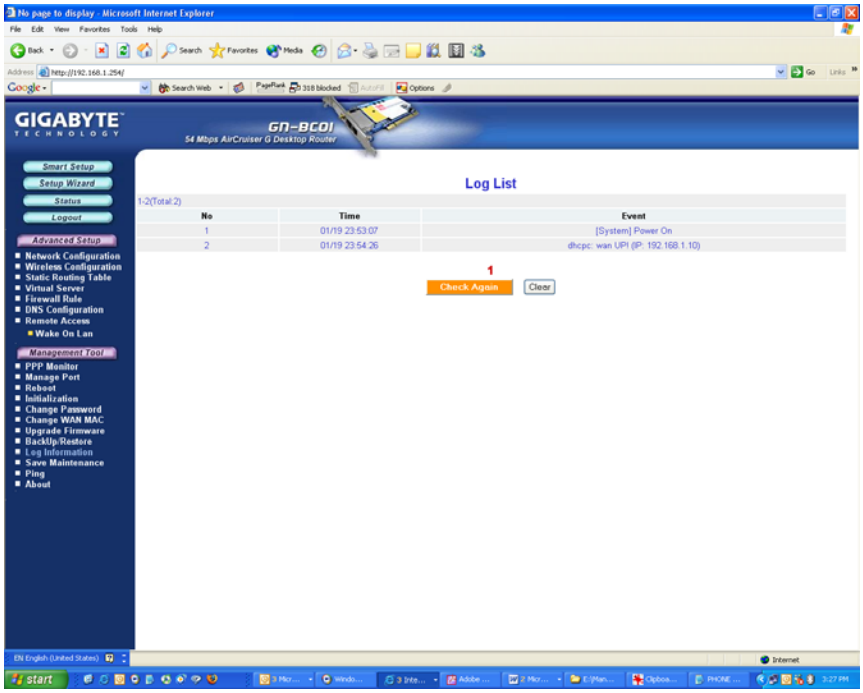


Figure 7-9 – Event Log Screen

The Ping Screen

'Pinging' involves sending a packet of data to a site and recording how long it takes for the site to acknowledge receipt. This is useful if you think that a web site might be slow or unavailable. Type the IP Address and click the Ping button to start.

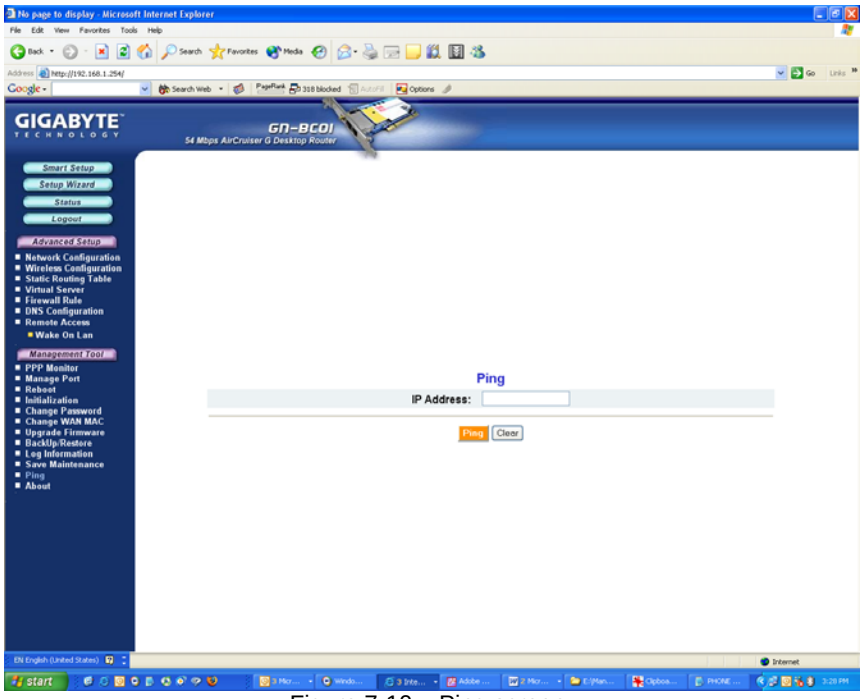


Figure 7-10 – Ping screen

The About Screen

The **About** screen displays the AirCruiser G Desktop Router name as well as the firmware version.

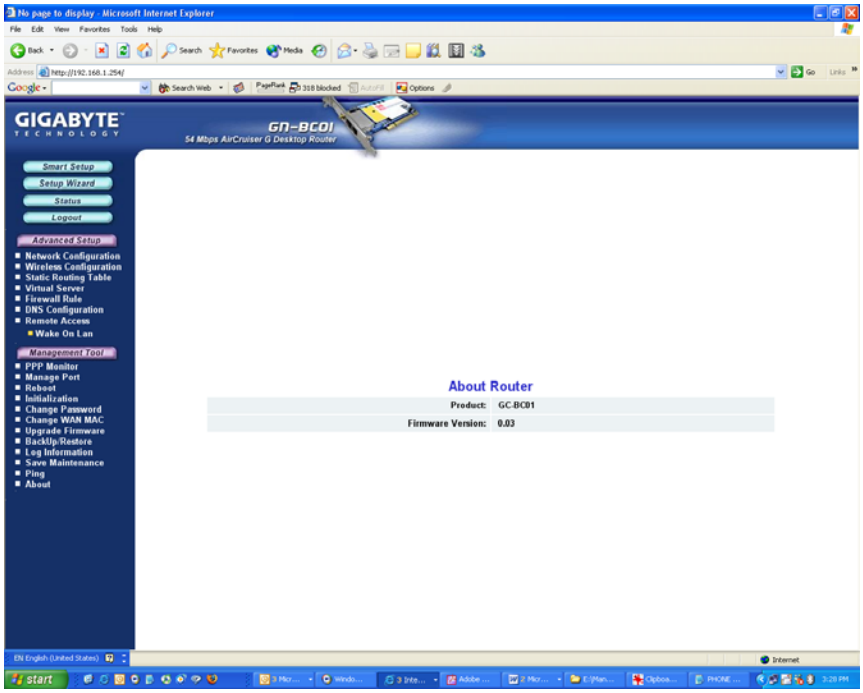


Figure 7-11 – About Screen

Configuration Buttons

There are four buttons on the top left panel of the configuration menu; SmartSetup, Setup Wizard, Status, and Logout. These buttons are useful for accessing status information or setup wizard.

Smart Setup Button

SmartSetup automatically detects your ISP connection type, and opens the proper ISP login screen.

Setup Wizard Button

Setup Wizard is similar to Smart Setup, but also presents you with a LAN setup screen which allows you to set basic LAN configuration.

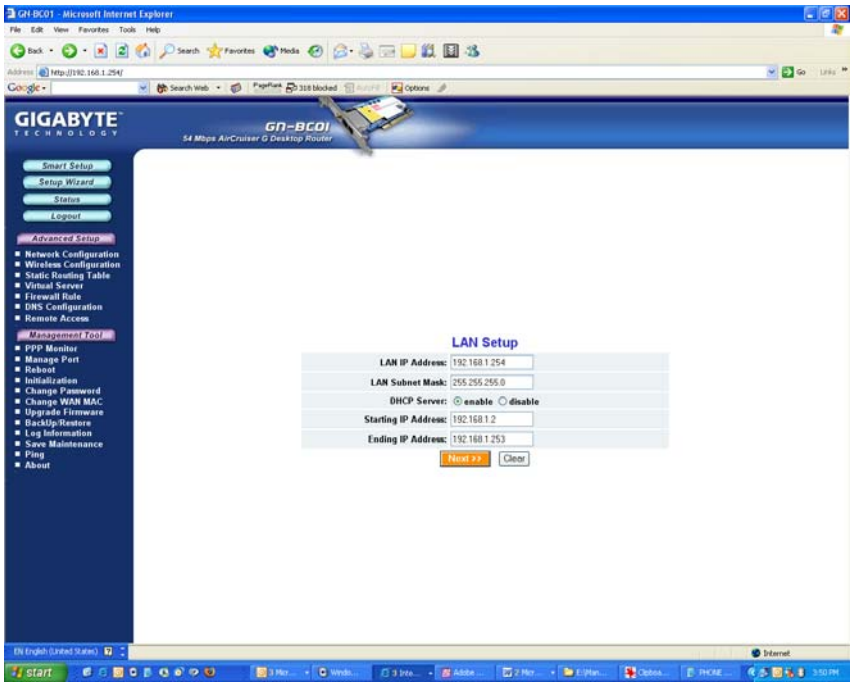


Figure 7-12 – Setup Wizard/LAN Setup

The Status Button

On the **Status** page the router's current connection and configuration information is displayed for the following; LAN Ethernet, WAN Ethernet, ARP Table, DHCP Lease Table, Routing Table, UPnP Port Mapping Table.

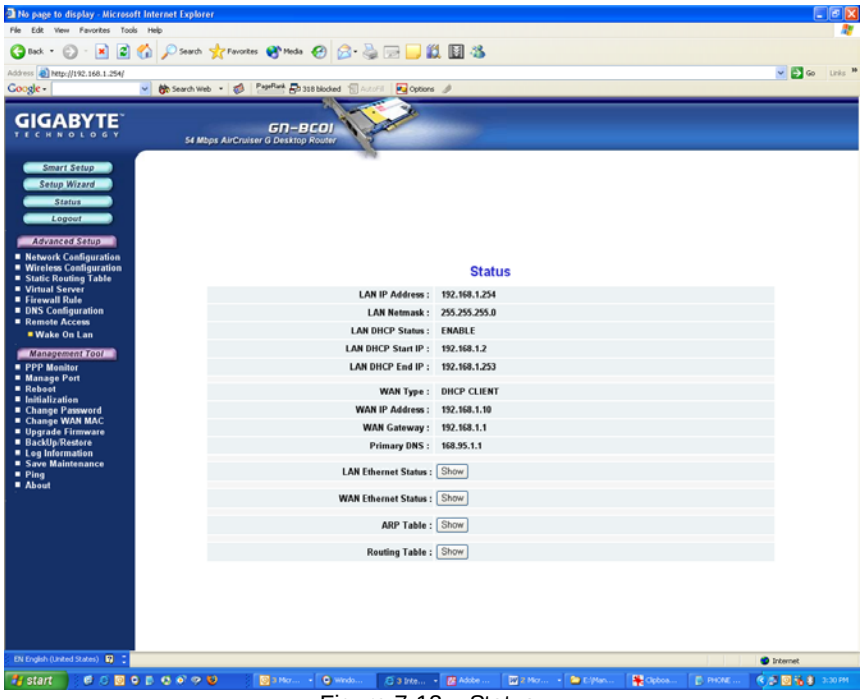


Figure 7-13 – Status

LAN IP Address

Displays the primary IP address being used by the Local (LAN) port of the Router. The default is 192.168.1.254

LAN Netmask

Displays the IP Subnet Mask being used by the Local (LAN) port of the router. Default is 255.255.255.0

LAN DHCP Status

Identifies if the Router's built-in DHCP server is active for the attached devices on the LAN.

LAN DHCP Start IP

The starting IP number in the range possible IP addresses issued by the DHCP server.

LAN DHCP End IP

The last IP number in the range possible IP addresses issued by the DHCP server.

ISP Number

The number of ISP accounts configured in the current session.

ISP Name

System assigned name given to the ISP.

WAN Ethernet Status

The **WAN Status** displays the associated MAC address and IP address pairs of your LAN devices. In the example below, only the AirCruiser G Router is in the ARP Table.

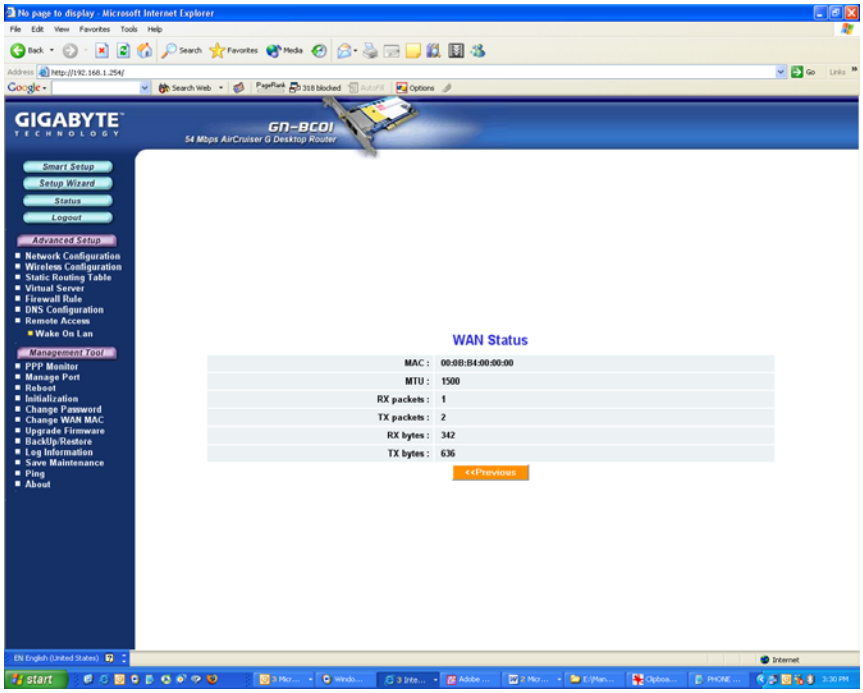


Figure 7-14 – WAN Status

MAC

The field displays the MAC address used by the WAN port of the router.

MTU

The maximum size of the packet sent from your computer to the Internet.

Rx packets

The number of received packets of this port after resetting or manually initializing.

Tx packets

The number of transmitted packets of this port after resetting or manually initializing.

Rx bytes

The current bandwidth (receive) on the WAN port.

Rx bytes

The current bandwidth (transmit) on the WAN port.

ARP Table

The **ARP Table** displays the associated MAC address and IP address pairs of your LAN devices. In the example below, only the AirCruiser G Router is in the ARP Table.

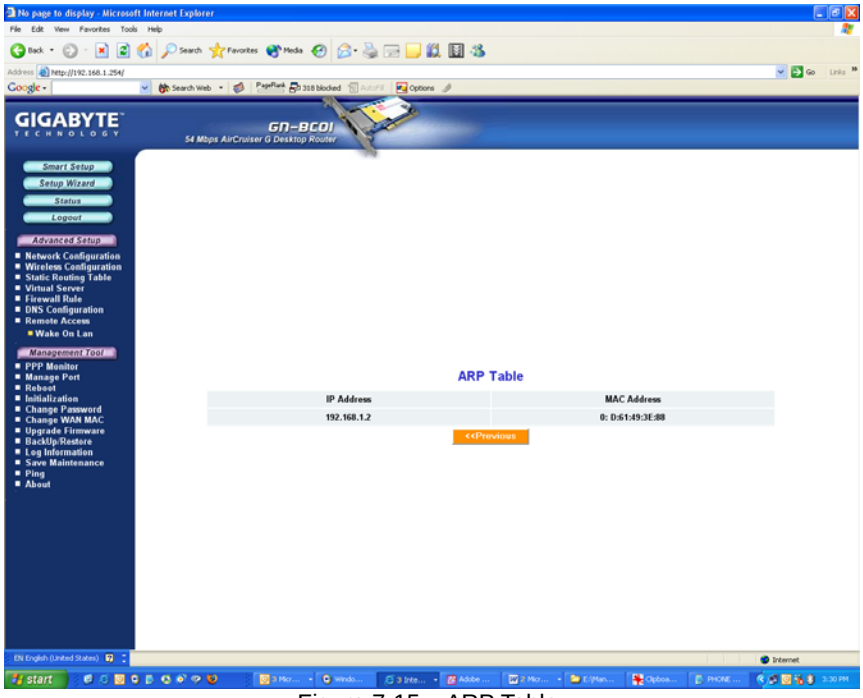


Figure 7-15 – ARP Table

Routing Table

The **Routing Table** displays the AirCruiser G RIP routing details.

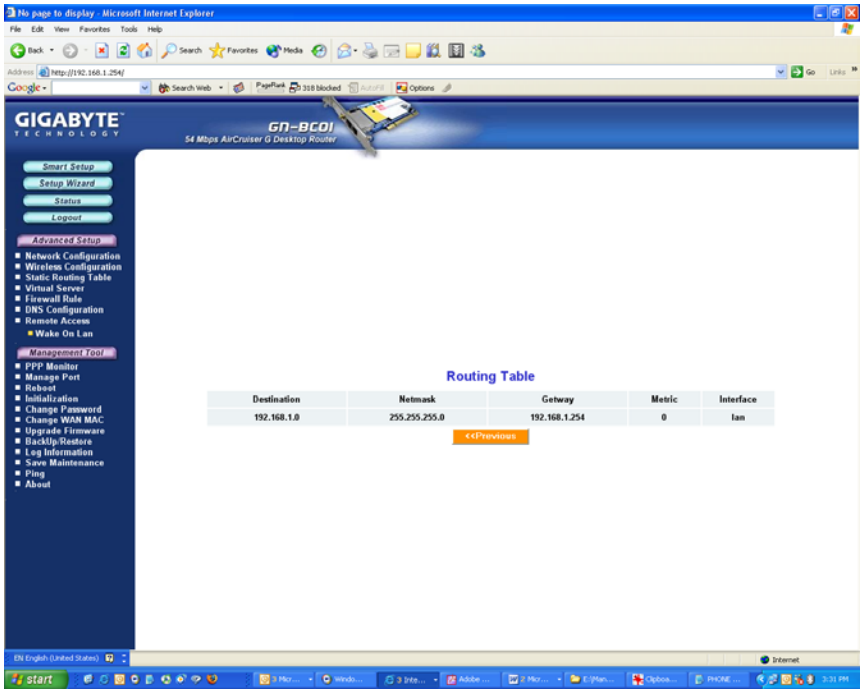


Figure 7-16 – Routing Table

Destination	The IP address of the destination network address.
Netmask	The subnet of that destination IP address.
Gateway	Gateway of the destination IP address.
Metric	Hop count to the destination network.
Interface	Type of interface used.

The Logout Button

On the **Logout** page confirms that you have successfully logged out of the AirCruiser G Configuration.

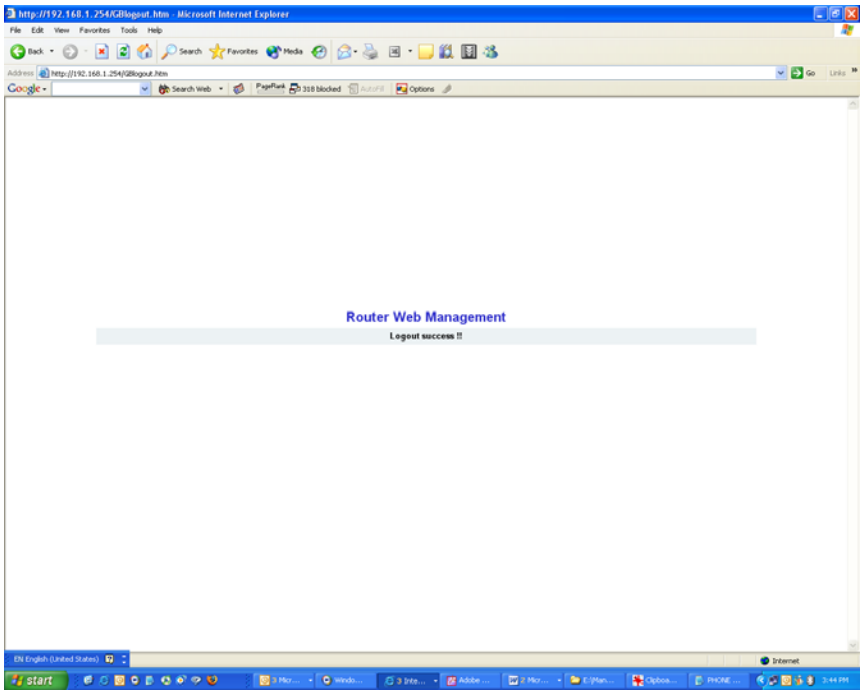


Figure 7-17 – Logout confirmation screen

Chapter 8 Troubleshooting

This section provides solutions to common problems that may occur during installation, configuration or use of the AirCruiser G Desktop Router.

Q: I can't remember the password or IP address of the router.
A: You can resolve this by pressing the "**Init**" button on your Router. The Router will reboot and all settings (including the default password) will be restored to their default values.

Q: I can't connect to the Internet.
A:
1. Check that the power cord is connected properly, and the router's power LED is lit green.
2. Verify that all the configuration settings are correct.
3. Check that your ADSL/Cable Modem is operating normally, and/or you have ISP service available.
4. Check that all network cabling is properly connected.

Q: I can't access the AirCruiser G Desktop Router Web Configuration Utility.
A:
1. Please check the Ethernet cable between the PC and the Router is properly connected.
2. Make sure your computer's IP address is on the subnet where the Router locates.
3. In your PC's TCP/IP settings, try checking the setting "Obtain and IP address automatically" and try again.
4. Make sure you are using the correct login information. The default value is 'admin' for both username and password.

Q: Where in the network do I connect the router?
A: In a typical environment, the AirCruiser G Desktop Router is installed directly onto the ADSL/Cable Modem. Plug the RJ45 Ethernet cable of the ADSL or Cable Modem into the WAN port of the Router.

Q: Can the AirCruiser G Desktop Router work as a DHCP server?
A: Yes. The AirCruiser G Desktop Router has a built-in DHCP server function so that apart from all the standard DHCP functions, it helps prevent IP conflicts.

Q: What is WEP?
A: Wired Equivalent Privacy (WEP) is a security mechanism defined within the 802.11 standard. It is designed to make the link integrity of the wireless medium equal to wired cable. Data privacy mechanism based on a 40 bits (128 bit optional) shared key algorithm, as described in the IEEE 802.11 standard.

Q: What is the IEEE 802.11g standard?

A: The IEEE 802.11g standard specifies data rates of up to 54 Mbps in the 2.45-GHz band. It uses Orthogonal Frequency Division Multiplexing (OFDM), which is provided by this standard and is compatible with 802.11b standard offering speeds of about 11 Mbps. This standard uses Complementary Code Keying (CCK) modulation. Both 11g and 11b can operate at a range of up to 300 feet.

Q: When using BC01 in Australia, you will use PPPoA protocol. How to set up your configuration in BC01?

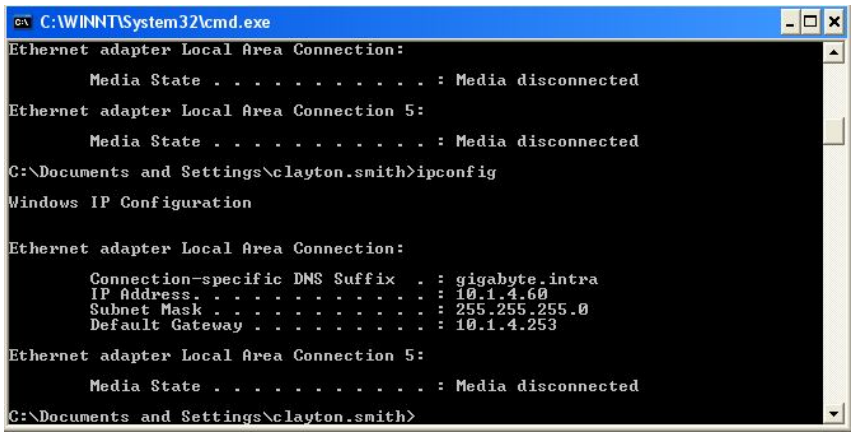
A: Suggestion 1, Using Static IP.
Suggestion 2, Using DHCP client to get IP from ADSL/ Cable modem.

Appendix A: Connection Troubleshooting

Problem: I get a timeout when trying to access the Router administration screen.

Answer: Verify the router's IP address as it sometimes will change depending on your network configuration. Open up a command terminal by clicking Start > Run, then type 'cmd' and click ok. At the DOS prompt, type `ipconfig`. The "Default Gateway" IP address is the address of your AirCruiser G. Use this number instead of 192.168.1.245 when logging in.

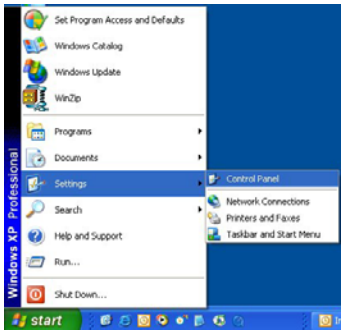
.


C:\WINNT\System32\cmd.exe
Ethernet adapter Local Area Connection:
Media State . . . . . : Media disconnected
Ethernet adapter Local Area Connection 5:
Media State . . . . . : Media disconnected
C:\Documents and Settings\clayton.smith>ipconfig
Windows IP Configuration
Ethernet adapter Local Area Connection:
Connection-specific DNS Suffix . : gigabyte.intra
IP Address. . . . . : 10.1.4.60
Subnet Mask . . . . . : 255.255.255.0
Default Gateway . . . . . : 10.1.4.253
Ethernet adapter Local Area Connection 5:
Media State . . . . . : Media disconnected
C:\Documents and Settings\clayton.smith>

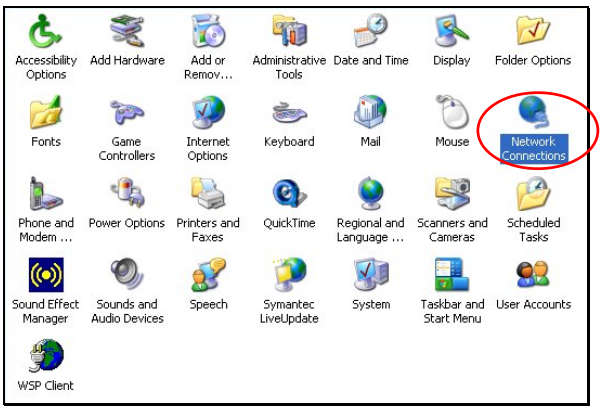
Problem: I can login to the router administration screen, and everything seems fine, but I can't connect to the Internet.

Answer: If you have trouble connecting to the internet, often times its due to settings in your TCP/IP settings or your web browser.

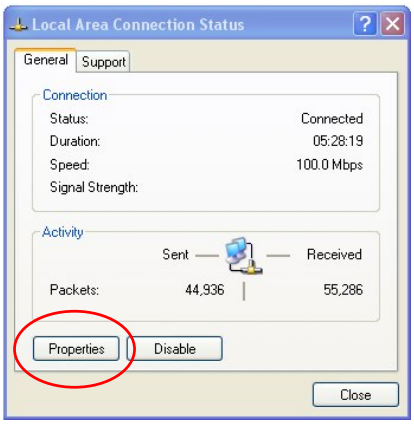
Step 1 Click the **Start** button. Select **Settings** and then **Control Panel** icon.



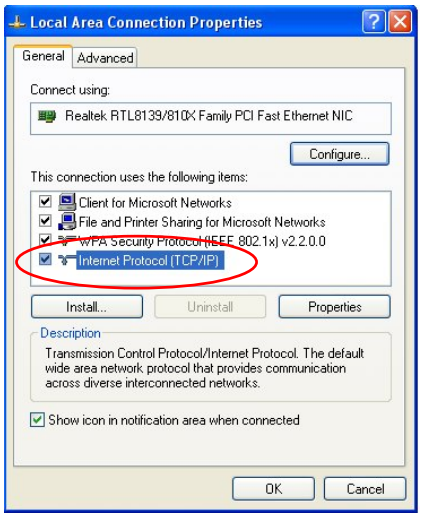
Step 2 Double-click the **Network and Dial-up Connection** icon.



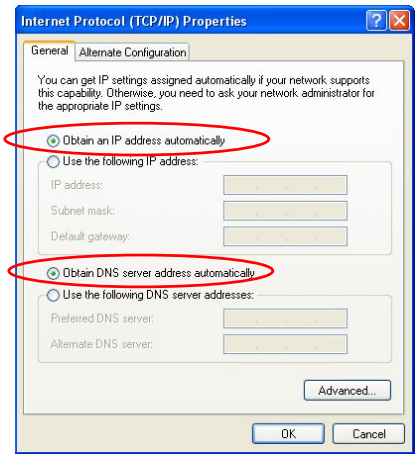
Step 3 Double-click the **Local Area Connection** icon, and then click the **Properties** button.



Step 4 The **Local Area Connection Properties** window will appear. For the applicable Ethernet / wireless adapter, make sure that there is a check in the **Internet Protocol (TCP/IP)** checkbox, then double-click on "**Internet Protocol (TCP/IP)"**



Step 5 Select both the **Obtain IP address automatically** and **Obtain DNS server address automatically**, options and then click **OK**. Continue clicking on the **OK** button to complete the PC configuration.


Internet Protocol (TCP/IP) Properties
General
Alternate Configuration
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Obtain an IP address automatically
Use the following IP address:
IP address:
Subnet mask:
Default gateway:
Obtain DNS server address automatically
Use the following DNS server addresses:
Preferred DNS server:
Alternate DNS server:
Advanced...
OK
Cancel

Your computer has been configured to obtain an IP address automatically from the AirCruiser G Desktop Router.

Step 6 Open **Internet Explorer.** From the menu select **Tools** and then click **Internet Options**.

Step 7 From the **Internet Options** window, click the **Connections** tab, and then click the **LAN Settings** button (see figure below).

Step 8 Now verify that none of the checkboxes have been ticked, and click on the **OK** button. Now you will be able to login to the Router and configure or change network settings.

Appendix B
Glossary

ADSL
Asymmetric digital subscriber line (ADSL) is a new modem technology that converts existing twisted-pair telephone lines into access paths for high-speed communication of various sorts.

Auto-MDI/MDIX
On a network hub or switch, an auto-MDI/MDIX port automatically senses if it needs to act as a MDI or MDIX port. The auto- MDI/MDIX capability eliminates the need for crossover cables.

Auto-negotiate
To automatically determine the correct setting. The term is often used with communications and networking

DHCP
The Dynamic Host Configuration Protocol (DHCP) is an Internet protocol for automating the configuration of computers that use TCP/IP. DHCP can be used to automatically assign IP addresses, to deliver TCP/IP stack configuration parameters such as the subnet mask and default router, and to provide other configuration information such as the addresses for printer, time and news servers.

DMZ
In computer networks, a DMZ (demilitarized zone) is a computer host or small network inserted as a "neutral zone" between a company's private network and the outside public network. It prevents outside users from getting direct access to a server that stores company data. Typically, the DMZ contains devices accessible to Internet traffic, such as Web (HTTP) servers, FTP servers, SMTP (e-mail) servers and DNS servers.

DNS
The Domain Name System (DNS) is a distributed Internet directory service. DNS is used mostly to translate between domain names and IP addresses, and to control Internet email delivery. Most Internet services rely on DNS to work. If DNS fails, web sites cannot be located and email delivery service will be suspended.

Dynamic IP Address
An IP address is automatically assigned to a user’s AP in a TCP/IP network typically by a DHCP server.

Firewall
A system designed to prevent unauthorized access to or from a private network. Firewalls can be implemented in both hardware and software, or a combination of both. Firewalls are frequently used to prevent unauthorized Internet users from accessing private networks connected to the Internet, especially intranets. All messages entering or leaving the intranet pass through the firewall, which examines each message and blocks those that do not meet the specified security criteria.

Gateway
A device, usually a Router, that connects hosts on a local network to other networks.

IP Address
Every PC on the Internet has a unique identifying number, called an IP Address. A typical IP address looks like this: 216.27.61.137

IPSec
IPSec stands for IP Security. It provides authentication and encryption over the Internet. It functions at Layer 3 and thus secures everything on the network. It has become a standard protocol used for virtual private networks (VPNs).

MAC Address
On a local area network (LAN) or other network, the MAC (Media Access Control) address is your computer's unique hardware number. Usually written as: 01:23:45:67:89:ab

MTU
The size in bytes of the largest packet that can be sent or received.

NAT
A technique by which several hosts share a single IP address for accessing the Internet.

Ping (Packet Internet Groper)
A utility to determine whether a specific IP address is accessible. It works by sending a packet to the specified address and waiting for a reply. PING is used primarily to troubleshoot Internet connections.

SSID
SSID is the name representing the Router in WLAN.

PPPoE
Point-to-Point over Ethernet is a protocol for connecting remote hosts to the Internet over an always-on connection by simulating a dial-up connection.

Router
A device that forwards data packets along networks. A router is connected to at least two networks, commonly two LANs or WANs or a LAN and its ISP network. Routers are located at gateways, the places where two or more networks connect.

Subnet Mask
A mask used to determine which subnet an IP address belongs to. An IP address has two components, the network address and the host address. Subnetting enables the network administrator to further divide the host part of the address into two or more subnets.

TCP/IP
TCP/IP (Transmission Control Protocol/Internet Protocol), the suite of communications protocols used to connect hosts on the Internet.

VPN
Virtual private networks are secured private network connections, built on top of publicly accessible infrastructure, such as the Internet or the public telephone network. VPNs typically employ some combination of encryption, digital certificates, strong user authentication and access control to provide security to the traffic they carry. They usually provide connectivity to many machines behind a gateway or firewall.

WAN
Wide Area Network, a communication network that covers a relatively broad geographic area, consisting of two or more LANs. Broadband communication over the WAN is often through public networks such as the ADSL or Cable systems, or through leased lines or satellites. To simplify it, please image network as a WAN.

WEP
WEP (Wired Equivalent Privacy) is a data privacy mechanism based on a 64/128-bit shared key algorithm, as described in the IEEE 802.11 standard.

Appendix C
Regulatory

CE Mark Warning: This is a Class B product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

FCC Statement: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution: To assure continued compliance, any changes or modifications not expressly approved by the party responsible for compliance could void the user authority to operate this equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

IMPORTANT NOTE:
FCC Radiation Exposure Statement:
This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body. The antenna(s) used for this transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Europe - Declaration of Conformity

CE	This device is a 2.4 GHz low power RF device intended for home and office use in EU and EFTA member states. In some EU / EFTA member states some restrictions may apply. Please contact local spectrum management authorities for further details before putting this device into operation.

GIGA-BYTE Technology, Inc. declares that the product: **Wireless Broadband Router Model Number: GN-BC01** is in conformity with and in accordance with the European Directive of EMC, 89/336 EEC for the following sections:

EN 61000-3-2, EN 61000-3-3, EN 55024, and EN 55022 Disturbances and Immunities

GIGA-BYTE Technology, Inc. also declares the conformity of above mentioned product with the actual required safety standards in accordance with LVD Directive 73/23 EEC:

EN 60950 Safety

In accordance with R&TTE Directive 1995/5/EC, Part 17: Requirements for Operation in the European Community, GIGA-BYTE Technology, Inc declares the conformity of the above mentioned products for:

EN 300 328-2 V1.2.1, ETSI EN 300 328-1：V1.3.1, EN 301 489-1, and EN 301 489-17 Technical Requirements for Radio Equipment

Countries of Operation and Conditions of Use in the European Community
The user should run the configuration utility program provided with this product to check the current channel of operation and confirm that the device is operating in conformance with the spectrum usage rules for European Community countries as described in this section. European standards dictate a maximum radiated transmit power of 100mW EIRP and a frequency range of 2.400 - 2.4835 Ghz.

Operation using 2.4 GHz Channels in France
2.4 GHz Bande: les canaux 10, 11, 12, 13 (2457, 2462, 2467, et 2472 MHz respectivement) sont complétement libres d'utilisation en France (en utilisation intérieur). Pour ce qui est des autres canaux, ils peuvent être soumis à autorisation selon le département. L'utilisation en extérieur est soumis à autorisation préalable et très restreint. Vous pouvez contacter l'Autorité de Régulation des Télécommunications (http://www.art-telecom.fr) pour de plus amples renseignements.

Please check ART's web site for latest requirements for use of the 2.4GHz band in France:
http://www.art-telecom.fr/eng/index.htm.
When operating in France, this device may be operated under the following conditions:
Indoors only, using any channel in the 2.4465-2.4835 GHz band.

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Appendix D
Specifications

General	
Standards	IEEE 802.3(10Base-T), IEEE 802.3u(100Base-TX), IEEE 802.11b/g(Wireless)
Ports / Buttons	LAN – 10/100 Ethernet (auto-MDIX), RJ-45 WAN - 10/100 Ethernet (auto-MDIX), RJ-45 One Init (Reset) button
Power	External; Internal 3.3(PCI); 5V(PC power supply)
Wireless	
Frequency Band	2412 ~ 2483 MHz (subject to local regulation)
Modulation Technology	OFDM and DSSS
Modulation Techniques	64QAM, 16QAM, QPSK, BPSK, DBPSK, DQPSK, CCK
Data Rates	54, 48, 36, 18, 12, 11, 9, 6, 5.5, 2, 1 Mbps (auto fallback)
Output power	18 dBm @ Nominal Temp Range
Receive Sensitivity	-69 dBm @ 54Mbps date rate at nominal temperature
Antenna	One external antenna
Wireless Range	*Outdoor:* 100 to 300m *Indoor:* 30 to 100m
Regulatory and Environmental Compliance	
EMC certification	FCC part (USA) CE(Europe)
Temperature Range	*Operating*: 0 to 40 °C, *Storage*: -20 to 65 °C
Humidity	10% ~ 85% Non-condensing
Protocols	
Routing Protocols	Dynamic, Static Routing with TCP/IP NAT, PPPoE VPN Pass-Through (IPSec) DHCP (Client & Server)
Security	64/128-bit WEP; WPA-PSK; WPA
Mechanical	
LEDs	Power/Status; LAN; WAN
Gross Weight	80± 1g
Dimensions	125mm x 65mm x 17mm

Appendix G
Warranty

Limited Warranty Statement (1-Year Warranty)

Thank you for purchasing the GIGABYTE Product. This limited warranty statement will provide you one year warranty starting from the purchase date. Of which if any defect is occurred due to accidents or any man-made factors, or any unauthorized torn-off or damage to GIGABYTE's sticker on the product, GIGABYTE Technology will not provide after-sale services, such as:

- Products are damaged due to any violation of instructions on user manual.
- Hardware is damaged due to inappropriate assembling.
- Products are damaged due to the use of illegal accessory.
- Products are damaged due to parts disassembling without authorization.
- Products are damaged due to exceeding environment limits.
- Products are damaged due to unexpected external force.
- Products are damaged due to nature disasters.
- Products are copies or illegally smuggled goods.

PLEASE RECORD THE FOLLOWING INFORMATION REGARDING YOUR WARRANTY

Name of Customer:	
Phone No:	
Address:	
Email:	
Model:	
Serial:	
Date of Purchase:	
Place of Purchase:	
From Whom:	
Distributor:	

Customer Service

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